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SURVEY OF MEDICAL AND HOSPITAL SERVICE IN WEST VIRGINIA

By THE AMERICAN COLLEGE OF SURGEONS

IN August and September of 1932 a survey of medical and hospital service in West Virginia was made by the American College of Surgeons with special attention given to that service provided by industry and its relation to medical economics. The four state hospitals for mental diseases were also included in this survey. The College expresses its thanks and appreciation of the courtesies and coöperation extended by the members of the medical profession in West Virginia, hospital executives, officials in industry, and others who helped to make this survey possible.

Scope of Survey and Statistical Data.—Eighty hospitals in West Virginia. Thirty of these hospitals are owned and operated by churches or governmental agencies; fifty are private or independently owned. Sixty hospitals were surveyed by the College. Thirty-nine industries of various types were surveyed by the College. Twenty-five hospitals are doing contract practice of which 22 are privately owned. 72,961 employees are served by contract hospitals. 350,805 people are served by contract hospitals.

West Virginia population (1930 census), 1,729,205. Twenty per cent of the population is served by contract hospitals which is slightly below the average, due to a large number of small mines being closed at the time of the survey. About 25 per cent of the population is served by contract medical service in their homes and at mining camp dispensaries. Five to seven hospital beds per 1000 population is the average ratio in the United States. In 1931 West Virginia had five hospital beds per 1000 population with a 78 per cent occupancy. In 1931 New York State had 11 hospital beds per 1000 population with 83 per cent occupancy. One hundred twenty-seven doctors per 100,000 population was the average ratio in the United States in 1930. In 1931 West Virginia had 103 doctors per 100,000 population. In 1931 New York State had 168 doctors per 100,000 population. In 1928 Germany had 73 doctors per 100,000 population.

The plans for medical service as utilized by the general manufacturing industry, railroads and the coal mining industry vary sufficiently to warrant dealing with each group separately.

Plans for Medical Service Utilized by the Manufacturing Industry.—PLAN 1. This plan, which is really no organized plan whatsoever, is used by industries having a small

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number of employees. No dispensary or first-aid facilities are provided at the plant. The injured employee is sent to the nearest available doctor or hospital. Many minor scratches or injuries are unreported and untreated until infection develops, resulting in greater disability. Lack of first-aid facilities and lack of organized and supervised medical service makes this plan productive of a greater number of poor end-results and thus more costly. Doctors and hospitals are paid from the Workmen's Compensation Fund according to a fee schedule.

PLAN 2. In this plan, used by industries having from 100 to 500 employees and by some of the larger non-hazardous industries, adequate first-aid or dispensary facilities are provided with a first-aid attendant on call or a graduate nurse in charge. There is lay supervision of the medical service. Officials in these industries stated that the injured employee was allowed free choice of doctor or hospital, but it was observed that in at least ninety-five per cent of the cases the doctor and hospital used were those designated by the industry. The employment manager designates the doctor and hospital and in the majority of cases competent doctors and approved hospitals are used. However, accessibility, personal influence, and price consideration through reduced rates occasionally influence the selection of doctor and hospital. It would appear that the advantages of approved hospitals would be obvious to industry. The doctors and hospitals are paid on a fee basis from the State Workmen's Compensation Fund.

PLAN 3. Industries having 500 employees or more usually provide adequate dispensary facilities at the plant, a first-aid attendant or nurse on duty, and one or more physicians on duty part or full time. Pre-employment physical examinations are generally made and general health measures supervised by the doctor. Sanitation is usually supervised by an engineer or by the city or county health officer. These industries have greatly reduced their accident frequency rate, and should be given credit for adequate medical care to their injured employees.

The chief surgeon or medical director makes it a point to use the leading hospitals for injured employees. The doctors are paid a salary or a salary plus additional remuneration from the Workmen's Compensation Fund for the care of compensable injuries. The hospitals are also paid on a fee basis.

Plans for Medical Service Utilized by the Railroads.—Railroads that are engaged in interstate commerce do not come under the jurisdiction of the Workmen's Compensation Act. Medical service for railroad employees is of two types:

First, the railway company assumes the medical and hospital costs for industrial injuries. Division and local surgeons are designated by the chief surgeon and arrangements made with local hospitals to care for their cases at moderate rates. The doctors are on a salary plus a pass basis. The employees all belong to a relief association which provides a cash remuneration for disability or death resulting from personal injury and illness. The employee chooses and pays his own doctor and hospital for this personal service. The staff of doctors maintained for the relief association also give pre-employment and periodic physical examinations as well as providing medical service at the shops for injured employees. For these services the railway company in turn subsidizes the relief association. Injured employees are paid one-half of their wages during convalescence, and a pension in case of a partial or total permanent disability.

Second, the employees contribute to a hospital association through payroll deduction ranging from 70c to $2.00 per month and which gives them complete medical and hospital service. The hospital is owned either by the railroad or the Employees' Hospital Association, and the railway company subsidizes this association to pay for the cost of industrial injuries. The doctors are paid on a salary basis. Members of employees' families are given hospitalization at one-half of the usual rates and the doctors' fees are

additional. No patients other than employees and their families are admitted to the hospital. Only one such hospital exists in West Virginia. High grade medical and hospital service is provided and the railway company and employees are well satisfied with this plan of service.

Plans for Medical Service Used by the Coal Mining Industry.—The coal mining industry may be divided into the northern and southern parts of the state according to the type of hospital service used.

NORTHERN PART OF THE STATE.—Under the present economic stress a number of hospitals in this section are contemplating the provision of contract hospital service to assure themselves of a definite financial income, but at the present time there is very little contract practice done. The coal operators in this part of the state pay the medical and hospital costs of compensable injuries through the Compensation Fund according to the original intent and purpose of the Workmen's Compensation Act. In accordance with this plan, it was found that there was no general criticism of the State Compensation Commissioner in the administration of the Workmen's Compensation Act as it affects the employee, the employer, the medical profession and the hospitals.

When these coal fields were developed, adequate hospital facilities were available as a rule and no contracts were made to provide such services. However, the coal operators maintain contract medical service through payroll deductions to pay the camp doctor either on a salary or a contract basis. A few coal operators have a voluntary Employees' Hospital Fund with some latitude of choice of doctor and hospital.

SOUTHERN PART OF THE STATE. The coal mining industry in the southern half of the state is practically entirely served by the contract hospital system. These coal fields were more recently developed. The isolated mining communities lacked adequate hospital and transportation facilities. Since the Workmen's Compensation Act legalized employers to make pay roll deductions and in turn make contracts for medical and hospital service for their employees, it was only natural that private hospitals would spring up to take advantage of an apparently assured commercial venture.

Medical Contracts at the Mining Camps.—All of the coal operators maintain obligatory monthly pay roll deductions to pay camp doctors. These pay roll deductions are commonly known as "check-offs" or "list practice." The deductions ranged from 75 cents to $1.00 per month for single employees and from $1.50 to $2.00 for married employees. This provides medical service for both industrial and personal injuries and illnesses of employees and their families or other dependents. Only one coal company of all that were visited pays the camp doctor a separate and definite salary for the care of industrial injuries. Surveys made by different coal operators' associations, employers and physicians have shown an average of five dependents per employee. This seems rather high but the average miner's family is unusually large and there are always relatives who are, or are willing to become, dependents, and thereby receive gratuitous medical and hospital services.

The total amount of money thus collected is either turned over directly to the doctor or he is placed upon a salary basis. There is an increasing trend toward the latter until at the present time about fifty per cent of the camp doctors are on a salary basis. The surplus of money collected for medical purposes, above the doctor's salary, drugs and rent, is often put back into the company's profits, used for production costs or for other than medical purposes. The officials of several large companies admitted this to be true. A flagrant example of this commercial exploitation of the medical profession is where in one month a coal operator deducted $900 from the wages of their employees, paid their doctor $275 per month, a drug bill of about $50, rent, light and other expenses of not over $75, leaving a balance of $500 which was not entirely expended for medical purposes. Under the guise of welfare work,

such surplus funds can be applied to most any company profit or expense. In this case no graduate nursing service was provided and the doctor furnished his own transportation. These commercial corporations are practicing medicine.

The employees and the medical profession have no basis for protest over the fact that the doctor is placed upon a salary basis, but they are justified in their demand that the money collected for medical purposes be so expended. Medical and welfare funds should be kept separate from company funds and under the trusteeship of the medical director or camp physician and of representatives from the employer and the employees.

The Camp Physician and Scope of Medical Service.—The contract of the camp physician calls for the care of the compensable injuries at the mine plus the care of personal illness and injuries of the employees and their dependents. All camp physicians are permitted to make additional moderate charges for treatment of venereal diseases and for obstetrical work. It is generally conceded that some contract arrangement is necessary in order to provide adequate medical service in the remote mining industries. Some of these doctors with the coöperation of company officials had provided excellent medical service. Along preventive health measures they had immunized all employees and their families against typhoid and small pox and they were conducting vigorous campaigns to eradicate diphtheria. Such a status of semi-controlled groups of employees in industry lends itself admirably to the practice of preventive medicine. Notwithstanding these opportunities a number of camp doctors in their somnolent and apparently secure position failed to exercise their prerogatives until officials of the company found it necessary to place them upon a salary basis and dictate the medical policies or engage a new physician. A few doctors admitted that, due to lack of competitive stimulus, they had regressed in initiative and general efficiency and, putting it into their own words, had degenerated into "pill peddlers."

So frequent and unreasonable are the demands made upon the average camp physician that one doctor stated that his office calls netted him five cents per call and home calls netted an average of ten cents. It was also observed that this coöperation of industry and the medical profession to provide medical care at low cost for the lower brackets of wage earners was not restricted to the low wage earners. High salaried company officials have taken advantage of this low cost medical care. In one instance a company doctor was obligated to make daily visits for several months to the home of an official to care for a bedfast member of his family. The official's salary was $10,000 per year and yet the doctor was obligated to provide daily care including medical supplies for the sum of two dollars per month. It is no wonder these conditions of virtual peonage force the doctor to buy the cheapest pills in fifty thousand lots and the practice of medicine becomes a "mockery." We must not be too critical, however, of the average mining camp physicians. They are rendering a much needed service under conditions which at best are unfavorable and they are deserving of coöperation and constructive action on the part of the medical profession.

Due to the lack of competitive pressure professionally, the average doctor's office or company dispensary was inadequately equipped and in poor state of repair. In most cases sufficient money had been collected in the past by the company or doctor through monthly pay roll deductions to warrant more adequately equipped and cleanly dispensaries.

Medical Service to Injured Employees at the Coal Mines.—Most coal operators have part of their men trained in first aid and mine rescue work, while some have as high as one hundred per cent of their men so trained. The U. S. Bureau of Mines in coöperation with the coal operators are deserving of credit for this most worthy effort. It is regrettable that the camp physicians have taken so little part in the instruction to the employees of the proper first aid to render the injured.

Splints, blankets, and first-aid supplies are placed in canisters and located at convenient

points within the mines. Injured employees are ordinarily splinted by their fellow workers in the mine at or near the place of the accident. Those not splinted in the mine are still given careful handling. The majority of the injured are then transported to the drift opening in empty coal cars, though a few mines had specially constructed spring stretcher cars for this purpose. The physician would treat the injured employee in the emergency station at the drift opening, where they were provided, or at his office.

Transportation from the Coal Mines to the Hospitals.—The distance from the coal mines to the hospitals used ranged from five to 65 miles, with an average of about 25 miles. One hospital alleged that the deaths of injured miners while in shock dropped practically to zero when they insisted that the company physician and officials assume some responsibility and treat the cases for shock before transporting them. There is no hard and fast rule as a guide in providing immediate or delayed transportation. The nature of the injury, condition of the patient, facilities for treatment and transportation, and distance to the hospital are all factors which must be considered in individual cases. It is the duty of the hospitals to inform and coöperate with the physician and officials at the mines concerning the proper first aid and decision as to transportation of the injured.

The following methods of transporting the injured to the hospitals are used:

1. Automobile—for all minor injuries.
2. Ambulance:
   (a) Provided by the company. A few coal operators charge the ambulance bill for industrial injuries to the injured employee;
   (b) Provided by the miners;
   (c) Provided by the hospitals. This ambulance service would only be provided to nearby mines or would meet the trains at the railway station;
   (d) Undertakers. The competition among the undertakers in some cities was so keen that they offered free ambulance service.
3. Railroads.
4. Open trucks:
   One hospital reported that the smaller mines in its neighborhood were using this type of conveyance. Miners working in wet sections of the mine whose clothing would become wet were particularly unfortunate should they suffer an injury and be transported at once in this condition and manner during the winter season.

It was noted that very few of the first-aid stations at the coal mines and none of the ambulances had Thomas or some type of ring splints for traction immobilization of fractures of the long bones before attempting transportation.

Hospital Contracts, Scope and Service.—The injured employee has no choice of hospital. It is the consensus of opinion of industry everywhere that from 60 to 85 per cent of their employees are not competent to choose wisely their doctor or hospital. The hospital contracts with the coal operator to provide medical, surgical, and hospital service for employees and their dependents through an obligatory monthly pay roll deduction of about one dollar for single and one dollar and fifty cents for married employees. Some hospitals make a flat charge of one dollar and others of one dollar and thirty cents a month for such services.

A few coal companies have had or now have "Hospital Funds" with voluntary membership which permit free choice of doctor and hospital. In all cases these funds have proven to be inadequate unless mempership is made obligatory, thorough medical supervision is given by the medical director and the expenditures closely checked. It has been suggested that an ideal economic arrangement for medical and hospital service in the coal mining industry would be to care for all compensable injuries as intended through the State Compensation Department and Fund and for the coal operators, medical profession and hospitals to encourage and coöperate in providing a "medical and hospital fund" to cover the costs of personal injuries and illnesses of the low wage earner and his de-

pendents. A reasonable latitude of choice of doctor and hospital would be permitted for personal injuries and illness in this plan subject to the approval, coöperative supervision or advice of the medical director of that industry.

The following is a typical contract as used by the hospitals in West Virginia which states its provisions and exceptions:

Contract

This memorandum of agreement, made this ...day of....., 193..., by and between the .....Hospital of....., ...County, West Virginia, party of the first part, and..... of....., West Virginia, party of the second part—

Witnesseth: That the parties hereto, in consideration of the mutual promises, terms and conditions hereinafter set out, have this day contracted as follows:

1. The party of the second part agrees to collect from each person employed by it in or about its business in.....County, West Virginia, the sum of One Dollar and Thirty Cents ($1.30) per month, which sum it agrees to collect in two equal semi-monthly payments and to remit to the party of the first part semi-monthly within five days after its regular semi-monthly pay days.

2. The party of the second part agrees to keep an accurate list of its said employees from whom it makes such collections, and to furnish said party of the first part a copy of such list upon demand.

3. In consideration of the collection and remittance of said sums as aforesaid, the party of the first part agrees to furnish to all employees of said second party from whom such collections are made and to their dependents (dependents here meaning members of the employee's immediate family dependent on him for support, and does not include household servants receiving wages from such employees or members of the employee's family who are engaged in gainful occupations), in the event of sickness, accident or injury, medical and surgical attention and treatment in its hospital at....., ... County, West Virginia. Such medical and surgical attention and treatment shall include a bed in one of the wards of said hospital and board, nursing and medicine for a reasonable time after entering said hospital for treatment, and shall likewise include rehabilitation work where rehabilitation work becomes necessary. In the event any case becomes chronic after such treatment and attention for a reasonable length of time, the party of the second part agrees to have the patient removed from the hospital or to make arrangements satisfactory to the first party for further treatment and care of said patient. In the event any such employee shall desire to have a private room in said hospital during such treatment, such employee shall be furnished such private room at the regular rate therefor less the sum of $3.50 per day. The party of the first part shall furnish an ambulance for the transportation of such employees from the railway station at .....to said hospital where necessary, provided reasonable notice of the arrival of such patient is given it.

4. The party of the first part agrees to admit to its said hospital and treat, as provided in the third paragraph hereof, all employees of said second party and their dependents as herein defined, who may be suffering from illness, accident or injury, except:

(a) Those having contagious diseases, namely, measles, scarlet-fever, chickenpox, diphtheria, epidemic cerebro spinal meningitis, erysipelis, smallpox, pulmonary tuberculosis, or other contagious disease that will endanger other patients in the hospital.

(b) Delirium tremens and injury resulting from drunken brawls.

(c) Normal labor cases and

(d) Venereal diseases, including gonorrhea, syphilis and chancroid.

Chronic and incurable cases will be received only during an acute attack or for diagnosis and will thereafter be subject to discharge by said first party. The party of the first part shall determine what cases are chronic or incurable and when such cases are no longer entitled to hospital treatment hereunder and when they shall be removed from the hospital.

5. All employees coming to said hospital for treatment hereunder, are to be treated by the hospital staff of said first party, but if any employee desires to employ, at his own expense, a physician or surgeon not on the hospital staff he shall have the right to do so.

6. The party of the second part agrees that it will make written application for admission to said hospital for such of its employees as may be entitled to such admission hereunder, and where possible, will accompany said application with a certificate of the physician who is attending the employee at the time of application. Said second party further agrees that it will not apply or send to said hospital for

treatment any employee or the dependent of any employee who has not made, at least, one monthly payment as provided in paragraph one hereof.

7. This agreement shall continue in full force and effect until terminated by either party hereto by giving at least three months' written notice of the intent to terminate and the time of termination.

Executed in Duplicate.

In witness whereof the parties hereto have caused their respective names to be hereunder subscribed, this the day and year first above written.

.....Hospital .....

By..... By.....

The definite and additional financial income received by the hospitals through their contracts has been the desirable feature to them. Some of these contracts have been offered directly to the hospitals by the coal operators, but there has been more or less solicitation by practically every contract hospital either by the doctors or by their paid lay solicitors. By soliciting, bartering and bidding for such work they have created a professional and hospital monopoly that has seriously interfered with and reduced the work and income of the private practitioner and the non-contract hospitals who receive their patients as a reward of skill or efficient service. A group of private practitioners in one West Virginia city has already gone on record as preferring state medicine to the present system and abuses of contract hospital practice.

The effect on the doctors' economic status is not alone the measure for approval or condemnation of hospital contract practice. The primary question is, "How does it effect the patient or society as a whole?" It was observed that among the best work done in the state in traumatic surgery was done by "contract hospitals," and also some of the poorest work was done by contract hospitals. An analysis made by the State Compensation Department as to end results obtained by contract and non-contract hospitals was said to show no appreciable difference. This finding was based upon the average percentage of disability allowed a definite number of injured employees treated in the two different types of hospitals. Observations made during this survey by the College of the equipment, competency of the various medical staffs and end results would seem to support their findings. Direct inquiry revealed that the great majority of employees are satisfied with the contract plan for medical and hospital service. The medical staffs of the contract hospitals naturally like this plan. The employer likes it because it saves him the medical and hospital costs of compensable injuries. The injured employee who gets a bad result in a contract hospital does not like the plan, as he is denied by law the maximum benefits of the Compensation Fund for medical and hospital care.

At one time contract hospitals were generally believed to commercialize their list practice in rendering a minimum of service and by discharging the patients before they should be discharged. This fact-finding survey found that at the present time this discrimination is not true in West Virginia. "List patients" are given the same attention as private patients and the average length of hospital stay is about the same.

Workmen's Compensation Act of West Virginia.—It is of interest to study those sections of the Workmen's Compensation Act that have a close bearing upon the plans and economic status of industrial medical service.

The West Virginia Workmen's Compensation Act was passed by the 1913 session of the legislature and has been amended or corrected by several subsequent legislatures. Parts of the law have never been entirely satisfactory, either in basic structure or administration, and there are necessary changes to be made to make it fair, equitable and just to the employer, to the employee, and to the public.

The State Compensation Commissioner is given almost autocratic power under the present law. It is his duty to provide a just and equal balance according to the act, but administration may favor the employer or the employee. In the correction of the act itself lies the correction of what many believe to be abuses of administration.

The Workmen's Compensation Fund which was also created in 1913 is operated under a more or less monopolistic state insurance plan. Very few employers are self insured or carried by insurance carriers.

Any employer who elects to accept the provisions of the compensation act and pays into the fund the premiums established enjoys a certain privilege and immunity in that he shifts the responsibility for injury to the employees from his own shoulders to the compensation department. The employer who elects to become a member of the compensation department is exempt from damage at common law or by statute for the injury or death of any employee, no matter in what way it occurs. This is plainly set out in the law, the only exception is that the employer shall not be in arrears in payment of premiums and shall have fully complied with other sections of the act. It is also provided that any employee who continues in the service of an employer after having had notice that such employer is a member of the compensation fund automatically waives right of action in court for damages for injury or death. Personal service of such notice is not required. Notice is presumed to be given to all employees, of election to become a member of the Workmen's Compensation Fund, by posting printed or typewritten notices in conspicuous places about the mine, plant, or place of business.

The second paragraph of Section 23 of the Compensation Act provides that:

"No employer or employee shall exempt himself from the burden or waive the benefits of this act by any contract, rule, agreement or regulation and any such contract, agreement, rule or regulation shall be pro tanto void."

This paragraph states clearly the original intent and purpose of the law as binding upon the state, the employer, and the employee. We shall subsequently see that the original intent and purpose is technically violated by all three parties concerned.

SECTION 27. The Commissioner shall disburse and pay from the fund for such personal injuries to such employees as may be entitled thereto hereunder as follows:

(a) Such sums for medical, surgical and hospital treatment as may, in the opinion of the Commissioner, be reasonably required, not, however, in any case to exceed the sum of eight hundred dollars.

(b) Payment for such medical, surgical or hospital treatment authorized under paragraph (a) hereof may be made to the injured employee, or to the person or persons who have furnished such service, or who have advanced payment for same, as the Commissioner may deem proper.

(c) Notwithstanding anything hereinbefore contained, no payment shall be made out of the Workmen's Compensation Fund for medical, surgical or hospital treatment for an injured employee, if said employee be entitled under contract connected with his employment or by reason of a subscription list to medical, surgical, or hospital treatment without further charge to him; *provided, however,* if in the opinion of the Commissioner on the advice of the medical examiner, an injured employee needs hospital treatment for an injury sustained under this act, such hospital treatment shall be ordered by the Commissioner and paid out of the Workmen's Compensation Fund, not, however, in any case to exceed eight hundred dollars. (Acts of 1925.)

No provision is made in sub-sections (a) and (b) for dental service. Under the present law an injury to the face or jaw affecting the teeth may be cared for under the general interpretation of surgical work, but this interpretation is not generally stretched to include technical dental work such as providing replacement by bridge or plate.

No provision is made in sub-section (a) or (b) for surgical appliances or artificial aids. In many cases of severe injury, such as a broken spine, a brace is necessary to make the patient more comfortable and in many cases to sustain life. Provision of such necessary appliances by the Commissioner as indicated above should be made mandatory.

Sub-section (c) may be technically construed as conflicting with the provisions of Section 23. Here is the justification of the employers of labor who insist that their employees maintain subscription funds for medical, hospital and burial service. The injured employee thus pays for all medical and hospital costs of injuries in the line of duty and

therefore holds the employers' payments into the Compensation Fund at a minimum. This law works unfairly to employees in the following ways:

1. The employees indirectly participate in the payment of employers' premium rates. The laws of Virginia, Kentucky, Tennessee, Alabama, and Ohio make it a punishable offense for the employer to apply a pay roll deduction on the payment of any portion of his own insurance premium. Forty-four states have Workmen's Compensation laws. Forty-one of these states definitely state the responsibility of the employer for the medical and hospital costs of compensable injuries. In two states, Washington and Oregon, the employer and the employee share such costs. In West Virginia the employee pays the medical and hospital costs of industrial injuries where there is a "contract connected with his employment or by reason of a subscription list to medical, surgical or hospital treatment." Attention is called to the section of the Ohio Workmen's Compensation Law, which deals with clarity in regard to this point. It reads as follows:

"SECTION 1465-94. No agreement by an employee to waive his rights to compensation under this act shall be valid, except that an employee who is blind may waive the compensation that may become due him for injury or disability in cases where such injury or disability may be directly caused by or due to his blindness. The industrial commission of Ohio may adopt and enforce rules governing the employment of such persons and the inspection of their places of employment. *No agreement by an employee to pay any portion of the premium paid by his employer into the state insurance fund shall be valid, and any employer who deducts any portion of such premium from the wages or salary of any employee entitled to the benefits of this act shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not more than one hundred dollars for such offense.*"

It is unfair that they should be required to pay into their own fund for medical or surgical treatment in cases where they are specifically covered by contract between their employer and the Workmen's Compensation Fund. Employees paying the monthly "check-off" for medical and hospital treatment, required by many employers, are expressly denied participation in the compensation fund for such treatment.

2. There is a provision in the section for a sum of $800 as a maximum to be expended for the rehabilitation of the injured employee should such sum be needed. The employee is punished by participating in the fund set up by his company for the reason that if medical, surgical or hospital bills are paid from the fund to which he contributes by means of the "check-off" he is denied the privilege of sharing in the maximum medical fund of the compensation department, which amounts to $800 for the primary injury and an additional $600 for rehabilitation, if necessary.

3. When payment for treatment is made from the local fund the employee must go to the contract hospital. If he elects to go to another hospital, or receive treatment from a physician other than the one bound to his company by contract, then that employee must pay his own bills.

Section 29 is related to Section 27 but is defeated, by the "check-off" for a burial fund, in rendering a service expressly provided for by the general terms of the act. This section reads:

"In case the personal injury causes death within the period of one year from the date of the original injury and the disability is total and continues from the date of such injury to date of death, reasonable funeral expense not to exceed one hundred and fifty dollars *may* be paid from this fund." (Remainder of section provides to whom payment shall be made.)

This section should be amended to make payment of funeral expense mandatory, when death results from an injury coming under the provisions of the compensation law. If the employee is a member of the burial association set up by his company this expense would not be paid under the present law. Here again the employer has dodged his responsibility to the employee. Attention is again called to the Ohio Workmen's Compen-

sation Fund which takes a definite stand on this particular point. Part of Section 1465-89 reads as follows:

"In case death ensues from the injruy, reasonable funeral expenses *shall* be disbursed and paid from the fund in an amount not to exceed the sum of two hundred dollars."

Section 38 reads as follows:

"The commissioner shall have authority in certain cases where an employee has sustained a permanent disability, and such fact having been so determined by the commissioner, and in his opinion *the per centum of the disability can be materially reduced or made negligible by medical, surgical or hospital* treatment, after due notice to the employer, expend an amount not to exceed the sum of six hundred dollars for such medical, surgical, or hospital treatment, regardless of any surgical or hospital treatment. No payment shall be made for such medical, surgical or hospital treatment provided for in this section unless such treatment has been duly authorized by the commissioner prior to the rendering of such treatment."

It has been observed that those injured employees who require rehabilitative surgery after having been treated in a hospital under contract arrangement receive very little or no coöperation from the Compensation Commissioner in obtaining this rehabilitation.

It would appear that such contracts which deny the injured employee some of the benefits of the Workmen's Compensation Act have been promoted by the coal operators, doctors and hospitals for selfish gain, and those contracts are not in accord with the original intent and purpose of that act. Regardless of the principle involved it is legalized in West Virginia and correction of this situation must come through legislation. Committees of the state legislatures of 1927 and 1931 investigated the hospital contract system, and recommended, "that the hospital contract service be discontinued insofar as it relates to industrial accidents and affects the employees whose employers are subscribers to the Compensation Fund." Their effort to amend this vague section of the Workmen's Compensation Act so that it would state with clarity the responsibility of the employer for compensable injuries, was unsuccessful. The proposed amendments provided that the employer should pay for medical and hospital costs of compensable injuries.

Features Evinced by the Survey of Contract Practice in West Virginia. — Good Features:

1. The group insurance principle is utilized to provide medical and hospital care at low cost.
2. It has prevented pauperization of a large number of miners and their families for medical and hospital services.
3. It gives the employer and the employee a sense of security.
4. It is conceded that some contract arrangement is necessary in order to provide adequate medical service in isolated industrial camps.
5. Practice in this restricted field makes those who practice it more efficient.
6. It fixes responsibility, which is considered an advantage by industry.
7. Prompt and twenty-four hour service is provided.
8. Uniform and prompt reports are usually rendered to the industry and to the State Compensation Department.
9. It is a plan that can compete with the present system of installment buying.

Evil Features:

1. An employee contributing through payroll deduction for medical and hospital services is specifically denied the privilege of sharing in the maximum benefits of the Workmen's Compensation Fund for medical and hospital care of compensable injuries ($800 for treatment of the primary injury—$600 for rehabilitation, if necessary).
2. An injured employee who gets a bad end result when treated in a hospital under the contract plan very seldom gets the proper coöperation or assistance from the Compensation Department. The Commissioner may expend an amount up to $800 to rehabilitate the injured employee but this is seldom done. The claimant is referred back to the contract hospital for any additional necessary surgery. A large number of the contract hospitals do not have staffs competent to do rehabilitative

surgery and, furthermore, since there is no additional financial remuneration, there is no stimulus to do it. As a result, the injured employee becomes a football between the Compensation Department, the contract hospital, and the camp doctor until his compensation award has expired, and he then falls back upon the general taxpayer of the state for future care.

3. Solicitation: In practically every instance there has been more or less solicitation by the doctors themselves or by paid lay solicitors.

4. Bribery and underbidding.

5. Commercial exploitation of the profession by the coal operators. The pay-roll deductions are not always used for the intended medical purpose. Commercial corporations are thus practicing medicine.

6. Professional monopoly.

7. Free choice of doctor and hospital is denied.

8. Extremes of inferior medical and surgical service, and of inadequately equipped and understaffed hospitals are made possible under this system.

9. The benefits of low cost medical and hospital service provided through small periodic payments are taken advantage of by others than the low wage earner.

Contract practice has its good points, but it is also subjected to so many abuses that the American College of Surgeons can not give a blanket endorsement to this type of practice. Each case must be judged upon its own merits. Some of the good points could well be amplified. The abuses of contract practice should be abolished.

The American College of Surgeons endorses the Principles of Medical Ethics as adopted by the American Medical Association and calls attention to two of its provisions, as follows:

"CHAPTER II, ARTICLE I, SECTION 4: *Advertising.*—Solicitation of patients by physicians as individuals, or collectively in groups by whatsoever name these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communications, is unprofessional. This does not prohibit ethical institutions from a legitimate advertisement of location, physical surroundings and special class—if any—of patients accommodated. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind, or by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other like self-laudations defy the traditions and lower the tone of any profession and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, and especially with his brother physicians, is the establishment of a well-merited reputation for professional ability and fidelity. This can not be forced, but must be the outcome of character and conduct. The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not per se improper. As implied, it is unprofessional to disregard local customs and offend recognized ideals in publishing or circulating such cards.

"It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or of success in the treatment of diseases; or to employ any methods to gain the attention of the public for the purpose of obtaining patients."

"CHAPTER II, ARTICLE VI, SECTION 2: *Contract Practice.*—It is unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patient or which interfere with reasonable competition among the physicians of a community. To do this is detrimental to the public and to the individual physician, and lowers the dignity of the profession."

State Miners' Hospitals.—In 1901 the State of West Virginia built three hospitals in the southern, central, and northern coal fields to serve the ill and injured who were connected with the coal industry. These hospitals now known as Welch, McKendree, and Fairmont Emergency Hospitals, filled a great need in those isolated communities in their earlier years, but they have served their purpose since those communities are now adequately served by private hospitals. At the present time these hospitals which were built and are maintained through taxation are in direct competition with private enterprise.

One of these hospitals has contracted with several coal operators to provide hospitalization at low cost through the "check-off" system. Another hospital has returned a profit to the state of over two hundred thousand dollars within the last few years, received largely for the care of compensable injuries.

Due to the fact that these hospitals and their staffs are maintained by the state, they are in a position to and do offer such reduced rates for hospitalization, including medical and surgical services, as to present a serious situation of unfair competition.

About ninety per cent of the patients using the miners' hospitals lived in their immediate vicinity. The question then arises as to why the people of the state should operate hospitals for the benefit of three local communities.

The miners' hospitals should be abolished as such. One of these hospitals is so inaccessibly located, inadequately equipped and in such poor state of repair that it has been removed from the approved list of the College. In its isolated location and poor state of repair it would be inadvisable to convert it to other purposes. It should be entirely abandoned. The other two hospitals are in excellent state of repair and should be utilized for some useful purpose—such as for crippled children, for the aged and infirm, or as general hospitals for the indigent only. If used for the latter purpose, it should be operated and maintained by the county or the community that is directly benefitted.

West Virginia Hospitals for the Treatment of Mental Diseases.—Four hospitals have been provided by the state for the treatment of mental diseases. The hospitals are located at Weston, Spencer, Huntington, and Lakin, the latter being used for colored patients. The total bed capacity is 3,300 beds, but the present census is 3,698 patients. Two of the hospitals are slightly overcrowded but not to a degree to impair the adequate care of the patients.

PHYSICAL PLANTS. The state of repair, the cleanliness and general house-keeping of the four hospitals were excellent. Within the last eighteen months two of the hospitals have added new buildings to be devoted to diagnostic and therapeutic purposes. The other two have remodeled existing structures for such purposes. Three of the hospitals have recently added diagnostic facilities and equipment, such as x-ray and clinical laboratories, dental departments, operating and other treatment rooms, and a limited amount of physiotherapy apparatus. Reduced budgets have temporarily stopped further additions of equipment.

The important items that three of the hospitals lack and that have been overlooked in their programs have been the provision of hydrotherapy and of occupational therapy. The latter is lacking in all four hospitals. These two methods for the treatment of mental disease patients have given such good results in the mental hospitals of other states, that they should not be omitted here. As purely custodial hospitals, these institutions are as good as any in this country and the State of West Virginia is deserving of full credit in this respect.

ORGANIZATION. The superintendents of the hospitals are appointed by the governor of the state. Each superintendent then selects his own medical staff. Administration and supervision of these hospitals are the duties of the State Board of Control which is composed entirely of laymen. It was observed that, in the past, political affiliations have influenced the selection of physicians for the superintendency of these hospitals. It is of importance that the superintendent shall have had training in psychiatry in addition to his executive abilities, and that he be required to provide for the patients the benefits of modern scientific diagnosis and therapy. Only one of the hospitals had designated a consulting medical staff. It is inadvisable for the full time medical staffs who are or should be psychiatrists to try to be universal specialists. Consultants from the other specialties should be definitely appointed in order to make their skill available to the patients.

STAFF RULES AND REGULATIONS. No staff rules and regulations have been adopted. Ex-

perience has shown such requirements to be necessary in order to assure orderly procedures and a definite understanding and performance of professional duties.

STAFF CONFERENCES. Weekly medical staff conferences are held to pass upon new patients and those about to be paroled or discharged. The provision of such group judgment is commendable and should be continued, but the findings and recommendations of the group have not been recorded upon the patients' records in the past.

DIETARY DEPARTMENT.—While no special attention has been given to dietetics, the food is prepared in clean kitchens, and in quality and quantity it measures up to the average for this type of hospital. No dietitians are employed. Modern mental hospitals have found the services and supervision of a dietitian to be necessary, particularly where ketogenic diet therapy for epileptics or other therapeutic diets are indicated.

NURSING SERVICE. All four hospitals had a minimum of graduate nursing service. One hospital had two graduate nurses for 1,593 patients, while another had five graduate nurses for 896 patients. All hospitals had a staff of lay attendants with an average of fifteen to thirty patients per attendant.

It is obvious that with the development of the scientific care of mental patients there will be greater need for graduate nursing service.

RECORDS. Adequate scientific care of the mental patients has not always been furnished in the past. Investigation revealed case records of patients who had been confined to these institutions for ten to twelve years and there were no records other than their commitment papers. There was no recorded evidence by the hospital staffs that these patients had been given the benefit of a complete physical, mental, and neurological examination either at the time of admission or at periodic intervals. There was no recorded evidence of progress or that these patients had been given the benefits of laboratory tests or other diagnostic and therapeutic measures. The committed patients can not escape; they are unable to appeal in case of lack of treatment, so the burden of responsibility on the superintendent is even greater than if it were in a general hospital.

It was observed, however, that within the last eighteen months, and particularly within the last few weeks previous to the survey, that the medical staffs of the different mental hospitals had instituted physical and mental examinations of patients upon admission and periodically thereafter with the findings and progress recorded. Treatment and operative records were also being started, but no uniform record forms to insure an orderly procedure have been adopted. Whether this awakening on the part of the medical staffs has been the result of the investigation of the State Medical Society into this matter or not, can not be said, but surely it is a needed one. Not only is it an economic saving to the state to effect early recoveries of their mental charges, but it is their trusted duty to provide scientific as well as custodial care.

HOSPITAL REPORTS TO THE STATE BOARD OF CONTROL. The annual report from each mental hospital to the State Board of Control gives a complete financial statement, the admissions, discharges and average census, the classification and total of patients according to diagnoses of diseases, but no report has ever been rendered as to the scientific or professional performance of the medical staff. There have been no reports of the number of physical and mental examinations either at the time of admission or at periodic intervals; no reports as to the number of clinical laboratory tests or examinations, x-ray examinations, medical or intravenous therapy, physio-therapy, dental or surgical operations. With a lay State Board of Control, it is not difficult to understand how such lack of scientific care has been allowed to continue. We would not expect them to be familiar with the desired and necessary scientific procedures. Such lack of medical control could be overcome by the appointment of a medical representative, possibly the State Health Commissioner, to the Board of Control, or medical supervision could be given to these hospitals by the State Public Health Council.

Specific suggestions and recommendations from the College have gone forward to the superintendent of each of the above hospitals. At the present time only one of the mental hospitals merits conditional approval by the College. There is no justifiable reason to prevent all four hospitals from reaching at an early date that point of attainment in equipment and facilities, custodial and scientific care of patients as will not only merit the full approval of the American College of Surgeons, but will be an assurance to the people of the State of West Virginia that nothing is being left undone in the care of their mental patients. To this end the College extends its sincere coöperation.

Conclusion.—From the unbiased facts presented in this report it is the opinion of the American College of Surgeons that—

1. The West Virginia Workmen's Compensation Act be so amended that it state with clarity the responsibility of the employer to the employee for the care of compensable injuries, and that the costs of medical, dental, surgical and hospital care, including artificial aids or other benefits, for compensable injuries be cared for through the State Compensation Department and Fund, according to the original intent and purpose of the law.

2. Inasmuch as contract practice has its good points but is also subjected to so many abuses the American College of Surgeons can not give a blanket endorsement to this type of practice. Each case must be judged upon its own merits. Some of the good points could well be amplified. The abuses of contract practice should be abolished.

3. All general and special hospitals in the State of West Virginia should comply with the minimum standard of the American College of Surgeons.

4. The three state miners' hospitals now known as Welch, Fairmont, and McKendree Emergency Hospitals should be abolished from competition with private enterprise. McKendree Emergency Hospital should be entirely abandoned on account of its inaccessibility, inadequate equipment, and poor state of repair. Welch and Fairmont Emergency Hospitals should be utilized for some useful purpose, such as for crippled children, for the aged and infirm, or as general hospitals for the indigent only. If used for the latter purpose, it should be operated and maintained by the county or community that is directly benefitted.

BUNKUM OF QUACKS

The modern "patent medicine" faker is little changed either in method or in manner from his forerunner of a hundred years ago. While incantations, amulets and charms have been discarded, practically all the rest of it survives.

J. C. Funk, writing in *Hygeia* for December about the gullibility of the hocus-pocus victim, gives the following facts concerning the modern quack:

"The onward rush of scientific achievement in medicine, chemistry, bacteriology, sanitation and disease prevention in no wise dampens the brazen effrontery of this seductive gentry. . . . To this group, however, belong certain food faddists who visit towns, advertise free lectures and make their appeal to that class of persons who are sufficiently educated to think they are quite above the average in mentality and therefore imagine that they are capable of understanding matters beyond the level of the ordinary person."

The food faddist "sells" these persons to the tune of $10 for the so-called essential talks.

Quackery is carried on at the present time on a national basis, quite in keeping with big business and national advertising. The formulas of these products contain but little that could in curative effect even remotely approach the claims made for them.

Many persons who go to pseudoscientists are led to believe by false x-ray pictures that they have a terrible ailment. In this manner many thousands of Americans who are quite well or nearly so, but for their thinking otherwise, through diabolic suggestion are thus made altogether miserable. And some lay down their lives in a pitiable attempt to save them.

The article comments as follows on all this so-called bunkum which takes many different forms and may easily lead the uninformed layman astray:

"Nature cults, autohemic therapy, astral healing, crompathy, diet fads and all the rest of it, including the alleged cures and testimonials of neurotics, must be thrown on the ash heap, where they rightfully belong."

BLINDNESS FROM THE PRACTITIONER'S STANDPOINT *

ORATION ON SURGERY

By J. E. BLAYDES, M.D.
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THROUGHOUT the ages people have been accustomed to refer to the heart as the seat of desire, anger, love, and passion. Yet the heart is a hollow, muscular pump, delicate in structure, its function being to force the blood through the body. Emotions arising in the brain will influence its rate. It is not, therefore, the seat of any emotion.

What a very different story is revealed by a study of the eyes! In this organ is reflected the very soul; the entire body may be changed by artifice, but the eyes remain unchanged. They reveal ambition, stability, intelligence, and character. Hence, it is vitally important that the care of the eye be the responsibility of, not only the specialist, but of all medical practitioners.

It is, in fact, self-evident that today, more than ever before, close integration of the specialties is necessary to insure the most nearly perfect application of the healing art. It naturally follows that a moderate but accurate understanding of the history, armamentarium and limitations of our many specialties be present in the minds of our brothers in medicine, particularly those specializing in general practice, internal medicine, and pediatrics.

It is, therefore, with pleasure that the speaker grasps the opportunity to present to this group a few of the pertinent facts that may be brought to bear upon this subject. They are not new, but are correlated here to clarify, if possible, a few of the situations which occur regularly in the practice of every ophthalmologist and which leave so much to be desired in the interests of both the patient and the physician. What ophthalmologist has not felt within himself reproach for failure to secure adequate medical supervision for the case presenting retinal hemorrhages and vascular changes when suddenly confronted with the news of his patient's death as the result of a cerebral accident?

As a specialty, ophthalmology occupies a unique position historically, having been the first to emerge from the field of general medicine and surgery ten or fifteen centuries before Christ, with its beginning in ancient Babylon-Assyria.

While the time of the first application of the theory and practice of ophthalmology is not known, the earliest mention of the subject is found, not in a medical journal but, curiously enough, in a law book of 2250 B.C. In this are passages specifying the emoluments and penalties of physicians. For instance: "If a physician . . . open an abscess (in the eye) of a man with a bronze lancet and save that man's eye, he shall receive ten shekels of silver" (as his fee). If, however, the law book sets forth, the physician "destroy the man's eye, they shall cut off his fingers." It is needless to point out that such penalties are not only quaint but, from the modern viewpoint, entirely unjust.

The earliest record of ophthalmology in Egypt goes back to 1650 B.C. The early Egyptian records are devoted mainly to the medical treatment of cataract, epiphora, trachoma, and other ailments of the eye. While we give credit to these ophthalmologists as pioneers, we must acknowledge that ophthalmology in ancient Babylon-Assyria and Egypt was governed principally by superstition and magic.

Modern ophthalmology dates back, not to Babylon or Egypt, but to Greece. There in the fifth century B.C. lived Hippocrates, considered today as one of the greatest ophthalmologists of all time, not because, when measured by today's standards he fitted this

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characterization precisely, but because he was the first physician, the father of all scientific medicine, of all natural science in general.

Hippocrates described the eye as consisting of three membranes: the white, the soft, the spider-web-like. His theory was that these membranes are distended by the ocular humors, aqueous, vitreous, crystalline. He knew the optic nerve, but did not understand its functions. He considered either the vitreous or the crystalline the essential organ of vision, rather than the nerve and retina.

Hippocrates resorted largely to restricted diet and hot foot baths in treating eye diseases. He also employed cupping and venesection. Burning out the blood vessels in the temple or forehead was a favorite remedy. He treated granular eyelids with frequency and success by rubbing the inner surface of the lids with milesian wool wound about a spindle-shaped core of hard wood.

The history of the evolution of the cataract operation is exceedingly interesting. The operation was first performed successfully by Daviel in April, 1747. An attempt previously by him in 1745 had been made in which the lens was broken up and the cornea split so that it might be washed out.

In the latter operation, Daviel attempted a depression, but found it impossible to move the lens out of its seat. Then, as he afterward explained, "I decided to open the lower portion of the cornea in order to get my needle more certainly into the posterior chamber. For a long time, I held the cornea up by a small forceps. At last, I brought forward the lens." This, then, was the first case of cataract extraction in the modern sense of the term, and the results were both perfect and permanent.

Blindness is always a matter of degree, graduating from absolute blindness or loss of ability to perceive the sensation of light, down through the various states of partial vision to the point where the ability to describe the letters of the Snellen chart at twenty feet approaches the line of what is deemed normal vision.

An article by the National Society for the Prevention of Blindness states there are 50,000 school children who can not see nearly as well as they should, and the appalling fact is that only 4,000 of this group are receiving special instruction, then 46,000 boys and girls are sitting in class rooms trying to compete in a race in which they are handicapped at the start. They are probably being called stupid, when their eyes and not their intellects are at fault.

Children themselves do not always know what is wrong. They have no way of knowing why the boy across the aisle understands exactly where the teacher is pointing when she indicates a colored map that hangs on the wall. To the children with defective eyesight the map is only a blur of so many colors. They can not understand why the other children complete the answers so quickly when the teacher places a list of questions on the board in front of the class.

Now and then a child will discover that the blackboard in the school room is moving farther and farther away, and that the words in his text book are growing smaller and smaller. When this occurs, he has a strange startled sense of fright. He fears that he is going blind and yet he will not voice the hated word, thinking that if it is kept a secret, maybe blindness will not overtake him. So he locks up his secret in a sensitive, misunderstood little heart.

Fourteen states are providing special instruction for children whose eyes are defective. They are placing lamps in the darkness. But in the other thirty-four states these handicapped children go stumbling along the same road the others take, faltering of course, and wondering why they can not keep up. The amount of added expense required for special instruction in such instances is little compared with the human anguish that a child with defective eye-sight can suffer.

A study of the Federal census for 1930 on the blind shows there were 63,489 blind persons reported in the United States, averaging 517 per million of population. New Mexico was highest with a rate of 1,434 per million; Missouri second with 1,069 per million; West

Virginia, with 814 blind, had a rate of 471 per million, while only nineteen states reported a lower rate.

The case of blindness encountered most frequently by you is optic atrophy with tabes being the underlying cause in most cases of simple atrophy, followed next by paresis, then inflammatory atrophy and last a break in the nerve due to compression.

Glaucoma, second in importance, is one of the groups in which high hopes may be entertained for an improvement in the index. The chronic form of the disease is insidious and very difficult to detect without a special examination. The tension of the globe is but moderately elevated, and often the field of vision is greatly constricted before the sight is affected sufficiently to excite the patient's attention unless an acute attack occurs.

It has been said of tuberculosis that fortunate is the patient who has his diagnosis made by a sub-lethal pulmonary hemorrhage. An exact parallel is seen in glaucoma with reference to the insidious character of the disease and the sharpness of the acute attack. It is in this acute attack that the practitioner will be able to distinguish himself. He is very likely to be called at night to find the patient suffering from an acutely inflamed eye with a steamy cornea and dilated and fixed pupil. The patient is complaining of pain, headache, nausea, and even vomiting.

If the physician detects the true nature of the condition, he will be able to cut short the attack by miotics and hot compresses, and further medical or surgical treatment may save practically all of the vision. On the other hand, should the condition be mistaken for iritis and atropine be given, an extremely serious situation is produced, which is quite liable to be fatal to the sight of the eye. Hence, it is very well worth while to be certain to rule out glaucoma in the presence of an acutely inflamed eye before administering atropine.

Iritis can be diagnosed grossly only by the presence of adhesions between the iris and the crystalline lens, although when the eye is viewed in a very bright light and with moderate magnification, other factors may be brought to bear upon the question. Under these conditions, one may see deposits of exudate and inflammatory cells upon the inner surface of the cornea, or notice the turbid aqueous humor. When these are seen, the diagnosis of iritis is proper, even though there be a secondary elevation of the tension of the eye known as secondary glaucoma. In this case, atropine is proper and necessary.

A further helpful fact is the history. In glaucoma the attack comes on suddenly, is excruciatingly painful and is apt to be precipitated in periods of stress of emotion, or merely at night, probably due to dilatation of the pupil.

The slit lamp and corneal microscope, as well as an instrument for measuring the pressure of the eyeball, are of great importance in diagnosing the borderline cases, but a great deal can be done without these. If there be any doubt, atropine should be withheld until consultation can be secured, for the penalty of withholding atropine in iritis is much less than that for giving the drug in glaucoma, and a few hours of hot compresses will be of considerable benefit in either condition.

The corneal ulcer is another condition with which the pracitioner will oftentimes be confronted. Here it is absolutely essential to get immediate control of the infection, because if allowed to go too long, a large scar will be the result. Should this scar happen to be over the pupillary area, the vision will be greatly reduced and the amount of vision lost depends entirely on the size of the scar.

Hence in removing foreign bodies, especially over the pupillary area, extreme care must be used to do as little damage as possible to the cornea. Denuding the first two of the five layers of the cornea is permissible, but any damage done beneath this will result in scarring.

The slowly developing senile type of cataract is likely to be well handled by the medical man. No great danger attends delay in taking action to restore vision and, in fact, great dissatisfaction is often justly registered

by patients who have been subjected to operation with fairly good sight in the other eye.

The results of cataract removal vary with the operator and his method, but standardization of technique, and the avoidance of certain fixed risks, combine with a rational and effective method of operating secondary cataract, will produce good results in this group. Responsibility here is solely with the ophthalmologist.

Trachoma, of varying importance in different parts of the world, is relatively rare in certain areas of America. This is very fortunate for the disease is naturally intractable and requires long and conscientious treatment. We must admit, in spite of recent work, that the organism producing this disease is as yet unknown. However, as the oldest recognized disease of the eyes, and one specific to the eyes, it has received considerable attention and treatment is definite.

It is characterized by round-cell infiltration of the lymphoid tissues of the conjunctiva and appears as a hyperplasia of the follicles of the lids. Any follicular conjunctivitis which does not respond to treatment is suspicious, especially when accompanied by the formation of a pannus at the upper margin of the cornea. If any feature of the disease is diagnostic, it is the pannus for every case shows an involvement of this region, ranging from a few superficial blood vessels dropping down on the cornea from the limbus to a thick, rough, elevated opaque mass covering practically the entire cornea and obscuring the sight.

While this change is going on, there is invasion of the tarsus of the upper lid which most frequently causes softening, infiltration, scarring, distortion and drooping of the lid, as well as a condition of entropion in which the lashes are pulled inward and rub against the globe.

This entropion causes further irritation and ulcers as a result are not infrequent. Trachoma should, therefore, receive careful, intelligent, and prolonged treatment to eradicate the condition and to prevent and correct its many complications.

Ophthalmia neonatorum, while not so prevalent as before the adoption of the method of Crede, is still with us and when it occurs calls for immediate and energetic treatment. The process is highly purulent, ulcerative and, as you all know, infectious. Treatment consists of keeping the conjuctival membranes free from the infected pus and mucus which forms so rapidly. In this connection, it is well to menation that a routine irrigation with boric acid solution every two hours is not always sufficient, as the lids must be kept clean, even if irrigation every thirty minutes is necessary.

Moreover, a bland antiseptic, preferably one per cent mercurochrome or twenty per cent argyrol, must be used intermittently, and the lid margins protected with an ointment. The important point is to keep up the treatment both day and night for, by so doing, we know that corneal opacities from ulceration, as well as perforation of the cornea and, finally, phthisis bulbi, those dreaded sequlae of this condition, may and can be prevented.

Phlyctenular kerato-conjunctivitis to the practitioner sounds like a rare disease. It is in reality one of the most common diseases of the eye and said by many to cause more poor vision than any other eye condition. Here we will find an intense aversion to light, it being sometimes almost impossible to open the lids because of the spasm.

The lesion is a plugging of one or more of the capillary loops at the margin of the cornea with round-cell infiltration of the tubercular type. Hence, the nodule, which has a tendency to ulcerate, may be looked for at this margin.

While focal infection may play a part in precipitating this disease, we feel that the condition is the expression of a tubercular diathesis and that these phlyctenules, allergic in character, are a local manifestation of the individual to tuberculin, usually resulting from a tuberculosis of the glandular type. Our treatment, therefore, calls for regulation of hygiene in every way; in fact, at times for the full routine care of the tuberculous child. Under this treatment, the lesions will, in most cases, clear and can be kept from appearing on the cornea and threatening the sight.

However, there are some very obstinate cases that will not respond to this treatment, and in the past year we have used tuberculin in practically all of these cases with very excellent results. Beginning with one (1) minim of Serial Dilution Number One of Tuberculin Residue, given twice a week and increasing one (1) minim each dose, a marked diminution in the number of phlyctenules has been noted after the second or, at most, the third injection. While the use of tuberculin in the treatment of phlyctenular kerato-conjunctivitis is not in general use, yet the results obtained by those who have used it are most gratifying.

Last, but of great importance, is the consideration of convergent strabismus, or uncorrected squint, whether based upon congenital paralysis or refractive errors.

It has been somewhat of a surprise to find so many excellent physicians who do not know that most children with one eye markedly crossed, which, of course, prevents the child from using this eye, will be practically blind in that eye upon reaching the age of seven. Therefore, you can see that preservation of binocular vision hinges upon the use of both maculae of the eyes at the same time before the child reaches that age.

To repeat, if a child's eye is not straightened by the time he is seven years of age, the chances are that he will lose the vision entirely in the squinting eye. The exception to this is the alternating type, which comprises a very small number.

Are there any parents who would not keep their child in the hospital for weeks to save the vision of an eye from any cause? You may say no, yet in cases of convergent strabismus we see almost every day children or adults blind in one eye because of ignorance or neglect.

The handicap to children with this deformity begins when they enter public school where they are forced to listen to the ridicule of schoolmates. This constant reminder through the school age by thoughtless children develops a marked inferiority complex that will in most cases serve as a distinct handicap throughout life, regardless of the vocation they undertake.

That this complex exists in later life is proven by the fact that most adults agree that they are always conscious of their eye turning in, and that they are placed at distinct disadvantage with such an affliction.

Therefore when a case of this kind is discovered, it is the duty of the physician to place his patient under the care of a competent ophthalmologist immediately. It is never too soon to start correction and delay could soon result in marked loss of vision. Careful refraction which, combined with training of the weakened eye by various methods, may restore binocular vision while the fusion center is yet impressionable.

It is a common fault to assure parents that the child will outgrow this condition. True enough, occasionally the eyes do align themselves in later life, but not before the real damage has been done. Regardless of whether the eyes should perchance straighten, we have inexcusably punished the patient with a blind eye, whereas with definite corrective measures we could very easily have bequeathed him an eye that was perfectly normal and, in every respect, a healthy and useful organ.

If we find the eyes do not straighten with the various corrective measures outlined by the time the child reaches the age of six or seven, an operation should be performed. Such surgery consists of a shortening of the external rectus muscle by resection, and a lengthening of the internal rectus by tenotomizing. This is a simple procedure accompanied by a minimum of danger to the sight, and necessitating a stay of only four or five days in the hospital.

This operation in adults should be performed under local anesthesia. While the vision will not be restored, they feel fully compensated in freedom from self-consciousness and a possible inferiority complex.

The gratitude expressed by some of these people, especially young girls and women, upon whom I have had the pleasure of correcting this deformity has been second only to that of some to whom I have had the pleasure of restoring their sight.

DIFFERENTIAL DIAGNOSIS AND TREATMENT OF THE TYPES OF COLITIS *

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COLITIS is an inflammatory disease of the large intestine. The term should be limited to include the diseases of this viscus which have definite characteristics. In recent years there has been a growing tendency to designate various diseases that cause abdominal discomfort, either associated with or quite apart from demonstrable intestinal dysfunction, as colitis. This has led not only to much confusion in discussions of physicians, but to much physical and mental anguish for a great class of sufferers. The term has become so ubiquitous that some writers of popular fiction have woven stories about the malady which it is supposed to depict.

Hurst, in the opening paper in a discussion of colitis, said: "No diagnosis is made more frequently and with less justification," and he continued, "a name indicating definite organic disease is given to explain symptoms of a purely functional type."

There are many intestinal irregularities not due to colitis, and in these days of scientific medicine it is remarkable that even the specialist, who has every means of diagnosis at his command, must still stand puzzled before approximately one-half of his cases of diarrhea. Yet that gives him no license to misname those in which colitis is not demonstrable.

Colitis is the commonest cause of intestinal dysfunction, but in spite of this, it represents a relatively small proportion of such dysfunctions. All manner of irregularity of the bowel must be considered in a differential diagnosis of colitis.

The common inflammatory lesions of the colon include bacterial chronic ulcerative colitis, tuberculous ulcerative colitis, amebiasis, amebic dysentery, and diverticulitis. Not only is careful distinction, one from the others, in these infections in order, to allow proper treatment to be instituted, but they must be distinguished from so-called "mucous colitis" or irritable colon, polyposis, malignant disease, and the less common conditions of bacillary dysentery, typhoid fever, infestation with Balantidium coli, regional "ileitis," sprue, pellagra, benign stricture, and all other causes of irregularity of the bowel. Occasionally achlorhydria is the basis of mild diarrhea. P. W. Brown has suggested division of the large group of indeterminate types of diarrhea into neurogenic, reflex, allergic, and deficiency, and has added other groups; namely, irritable bowel, diarrhea following acute infections, sprue-like diarrhea, and diarrhea caused by faulty digestion of fat. The latter three may be found to fit into other established categories, but in any event distinguishing them from true colitis is extremely important before treatment is begun. As in many other serious bodily ailments, the correct diagnosis is the key to successful treatment and ultimate prognosis.

INFLAMMATORY DISEASES OF THE COLON. —The four inflammatory conditions mentioned; namely, chronic ulcerative colitis, tuberculosis, amebiasis, and diverticulitis have features which definitely distinguish one from another, as well as from other lesions of the intestine.

The history of these cases is always suggestive of the nature of the underlying pathologic process. A history, dating back several months, of recurrent and intermittent attacks of bloody, purulent, rectal discharges, with day and night frequency about equal, gradual progressive, general depletion, and finally chronic invalidism, possibly lasting for years, indicates chronic ulcerative colitis. Progres-

* Read before the West Virginia State Medical Association at Parkersburg, June 23, 1932.

sive diarrhea, with gradual appearance of little, if any, blood, with occasional periods of constipation in the presence of pulmonary disease, and usually with a relatively short history, is suggestive of intestinal tuberculosis. Severe, recurrent attacks of diarrhea, with or without blood, with a tendency to more stools in the daytime than at night, and periods of complete remission, suggest parasitic disease. Diverticulitis is on a basis of diverticulosis.

The diagnosis can not be established by anamnesis. The three important guides to differentiation of ulcerative lesions of the large intestine are the gross and microscopic analysis of stools or rectal discharges, proctoscopy, and roentgenoscopy.

Chronic Ulcerative Colitis.—In chronic ulcerative colitis there is a characteristic rectal discharge, consisting predominantly of pus, mixed or streaked with blood and mucus, or there may be large clots of blood, and rectal gushes of liquid, bloody material. The stool may be mixed with these discharges as their lesser portion or, as in the cases in which only the distal portion of the intestine is involved, the stool may consist of scybalous masses discharged separately from the purulent material, or mixed with it and passed with some difficulty. Microscopically a vast predominance of polymorphonuclear leukocytes, and of streptococcus forms of bacteria will be found.

The proctoscopic picture has been well described by Buie, and in chronic ulcerative colitis the proctoscope gives the most positive diagnostic data. The easily bleeding, granular, diffusely inflamed mucous membrane is characteristic. Diffuse involvement is pathognomonic. There is no place in the mucosa which is not affected. Early, there are seen hyperemia and edema; then miliary abscesses are followed by miliary ulcers. Later, by pressure necrosis or confluence of ulcers, the larger, so-called secondary ulcers develop. The diffuse involvement does not include only the mucosa, but rather the entire wall of that portion of the large intestine which is involved in the inflammatory process. This, then, readily explains the roentgenologic picture. A diffusely narrowed, foreshortened, nonhaustrated colon results.

Although chronic ulcerative colitis usually begins in the rectum and spreads toward the more proximal portions of the colon, it may, on first observation, affect any portion or all of the large intestine. Occasionally, in this way, a regional or migratory type of involvement takes place, and the roentgenographic appearance is so irregular that, at times, it is difficult to distinguish from a roentgenogram taken in a case of tuberculosis or extensive malignant disease. However, other clinical data, with rare exceptions, clarify the situation.

There is a small group of cases in which there are irregular ulcerative lesions, which seemingly do not fit into any class with established etiology. There is another small group of mixed infections; namely, chronic ulcerative colitis and amebiasis, but in the main the objective evidence establishes a clean-cut differential picture.

Ulcerative Intestinal Tuberculosis.—The stool of a patient with ulcerative intestinal tuberculosis, even when involvement includes the rectum, is rarely bloody. Instead of the purulent bloody discharge of the patient with chronic ulcerative colitis, there are thin, watery, fecal stools. If blood is present, it is usually in barely discernible streaks or is occult. Microscopic evidence consists of much epithelial débris mixed with undigested food, and diligent search will reveal bacilli of tuberculosis. However, acid-fast bacilli alone, without other positive evidence of tuberculosis, must not be considered diagnostic, for other acid-fast organisms that have no pathogenicity may be resident in the intestine.

The proctoscope does not play as important a part in this disease as in chronic ulcerative colitis. If proctoscopic evidence is positive it is characteristic, but because of the much more common occurrence of the tuberculous ulcerative lesions in the small intestine and in the right side of the large intestine, positive proctoscopic pictures are seen in a smaller number of cases than in ulcerative colitis.

There are irregular, shaggy, deep ulcers, with undermined and over-hanging edges,

and between the large ulcers there may be, and usually is, normal mucous membrane. The involvement is not as diffuse, deep, nor extensive as it is in the cases of chronic ulcerative colitis, which explains the roentgenographic appearance after barium enema. There is a tendency for the roentgenographic shadow to have a smooth edge and for haustra to be obliterated, but this is not nearly so marked as it is in the case of chronic ulcerative colitis. Furthermore, the greater involvement in tuberculosis is usually in the ileocecal coil, and if ulceration extends caudad there may be a gradual funnel-like narrowing of the colon from the left side toward the cecum but the shadow, instead of having a smooth edge, will have a very irregular, "feathery" edge. Writhing and rapid emptying and filling of the ileocecal coil often are noted under fluoroscopic observation. In tuberculosis of the colon, roentgenographic measures are the most important diagnostic aid.

Parasitic Infections.—In parasitic infections, and here we are dealing mostly with amebic colitis, examination of the stools is the most valuable laboratory procedure. The stools are loose and watery, and in the active ulcerative stages may contain much mucus and fresh blood. Microscopic examination of emissions and finding of large numbers of Endameba histolytica is more than presumptive evidence for a correct diagnosis. There are rare exceptions, such as the five per cent of patients with chronic ulcerative colitis who are carriers of amebas, but in most patients whose stools contain Endameba histolytica intestinal symptoms are caused by them.

If, in addition, the typical proctoscopic picture is seen, the diagnosis is established. Amebic intestinal ulcers are disseminated, have a punched-out appearance, perhaps are covered by a fleck of mucoid material, and have a hyperemic, surrounding zone of mucosa, but between the ulcers will usually be found mucous membrane which appears fairly normal.

The roentgenogram, until recently, except in the more severe cases, has offered little help, but work by Weber and Faust is under way which bids fair to aid materially in the roentgenologic diagnosis of these cases. In the more severe and extensive cases of amebic ulcerative colitis, fluoroscopic evidence of irritability will be noted. As in the cases of tuberculous colitis, the more severe involvement is on the right side; smaller defects may appear here when no evidence of trouble is seen elsewhere in the colon.

All these forms of colitis have distinguishing characteristics, yet their distinction from other intestinal diseases, in which bleeding takes place, is not always easy.

Diverticulitis.—One of the conditions which is of an inflammatory nature is diverticulitis, but its occurrence depends on the presence of diverticulosis which is noninflammatory. In rare instances, there is associated bleeding, but by the history and roentgenogram, and occasionally by the proctoscope, the diagnosis is readily established.

The patient may have complained for a long time of irregular distress along the line of the colon, with some irregularity of intestinal evacuation. Suddenly, he is seized with discomfort in the left side, of the nature of appendicitis, with greater difficulty in evacuation of the bowel, fever of low grade, and leukocytosis. Rupture of one of the diverticula may take place, but fortunately walling off is usually satisfactory, so that the abscess forms locally. Perforation with generalized peritonitis is exceedingly rare, but rupture into a neighboring viscus, such as the bladder, is not infrequent.

Through the sigmoidoscope one sees the suggestive sacculation and sigmoid fixation, but with intact mucous membrane. Roentgenologic investigation is usually best avoided during the acute phase and should be undertaken as soon as the patient's condition warrants. There will be seen, in addition to diverticula of various parts of the colon, usually most marked in the sigmoid, the spastic defect suggestive of diverticulitis.

OTHER TYPES OF INTESTINAL DISTURBANCES.—The next important problem in the distinguishing of these organic types of colitis

is their separation from other types of intestinal disturbance.

Polyposis.—Any of the severe, ulcerating diseases, and particularly chronic ulcerative colitis, may leave in their wake, when the major condition has passed, a ragged intestinal lining, as the result of extensive ulceration and necrosis. The mucosa may be denuded in a large measure, leaving only tags and islands of inflamed, swollen, and hypertrophied tissues. As the intestinal wall heals and new mucous membrane replaces the denuded portions, one of two processes may take place: the new mucosa may extend up and over the residual mucosal tags, or it may grow up to the base of these tags, thus further extruding them into the lumen by a process of pressure and choking. By this and the traction of fecal current, polypoid tumors of considerable size may result. These may be very numerous, thousands in a single colon, and their multiplicity will bear a direct relationship to the site of the severest ulcerative colitis. This form of polyposis of the large intestine has been called, by some observers, pseudopolyposis, and has been designated by Erdmann and Morris as the adult or acquired type of polyposis. It is generally recognized that chronic ulcerative colitis usually begins in the rectosigmoid portions of the large intestine; hence the greatest number of polyps usually exist here and their numbers vary inversely with the distance from the cecum.

The second, adolescent type (congenital and disseminated) of polyposis is prone to be familial. I have seen cases of this in children of the first decade of life, and in such cases usually a parent had been similarly afflicted. However, serious symptoms rarely become apparent before the early years of the third decade of life. Hence, most patients present themselves for diagnosis at this time. In this condition one finds numerous disseminated polyps and polypoid projections into the intestinal lumen in the wall of an apparently otherwise normal colon, both from the standpoint of mucosal changes, and size and contour of the lumen. The tumors may be submucosal protrusions of many sizes and dimensions with a mucosal covering, or true adenomatous polyps. They may be so numerous that they literally cover and involve practically the entire mucosa of the large intestine. Many of them may be on pedicles which are sometimes several centimeters long. The dark discoloration often present in their serrated portion clearly distinguishes them grossly from the polyps following colitis.

A third type of adenomatous polyp of the colon, pathologically probably similar to or indistinguishable from the adolescent type, occurs in late adult life, during the period of senescent or degenerative change. These polyps may be single or at least relatively few in number. They may occur as definite benign lesions in any portion of the large intestine and often in close proximity to a malignant neoplasm. At times a single adenomatous polyp may present apparently benign changes in one region of its serrated portion and typical carcinomatous change in another. Or, as FitzGibbon and Rankin have shown, advanced, high-grade adenocarcinoma may exist in a short piece of mucosa of the colon, and near it may be all gradations of polyps from the standpoint of size, as well as varying stages of neoplastic change.

Digital rectal examination can not be overrated as a diagnostic aid in these cases. In chronic ulcerative colitis with polyposis the rectal lumen is narrowed, the wall is resistant, and lack of resiliency is noted. Studding this tube-like rectum, numerous irregular, sometimes nodular, projections are palpated.

In the second type the lumen is usually normal in size, the soft, velvety, pliable mucosa is felt, and studding this will be numerous soft, often pedunculated, tumors of varying sizes. When these are numerous and of nearly the same size, as is usually the case, one gets the sensation of passing the gloved finger over the surface of a rubber scrubbing brush.

The sigmoidoscope and roentgenologic observations are of greatest value here. Of particular value is the aerogram, recently introduced by Weber, to make which, after expulsion of a barium clysma, air is introduced

into the colon under fluoroscopic control and then stereoscopic films are taken for later observation.

Malignant Disease.—A relatively short history of intestinal irregularity, associated commonly with bleeding, and early with obstructive symptoms and with characteristic digital, sigmoidoscopic or roentgenologic data, usually establish the diagnosis of carcinoma of the colon. A malignant lesion of the rectosigmoid and rectum can be readily detected by careful digital examination. Because of the length and redundancy of the sigmoid, frequently a lesion of this portion of the large intestine telescopes sufficiently for digital exploration. Lesions of these structures can be adequately visualized through the sigmoidoscope. The filling defect of a lesion of the colon above this is usually sufficient to establish the diagnosis. Roentgenologic study of these structures is usually best made with the barium enema, after thorough colonic cleansing.

Bacillary Dysentery.—The occurrence of endemic or epidemic diarrhea of acute onset, with isolation of bacilli of dysentery usually establishes the diagnosis. One of the characteristics of the stools is their large mucus content with blood streaking, and relative freedom from pus. Isolation of the bacillus is necessary for exact diagnosis.

Typhoid Fever.—With this disease a situation prevails that is similar to that of bacillary dysentery. There are, in addition, the factors of sanitation, either a breaking down of the ordinary sanitary precautions or absence thereof, the isolation of the microörganisms of typhoid fever, and the clinical picture that is so well known.

Balantidium Coli.—Infestation with this flagellate is rare, and when it occurs the parasite is readily isolated from the stools. The rectal ulcers are fairly characteristic, and the clinical picture, with its accompanying anemia, is severe.

Ileitis.—There is a localized, chronic inflammatory disease of the ileum, recently described by Crohn, which is associated with diarrhea. The diagnosis can only be suspected, unless surgical exploration is carried out. It is associated with a rather characteristic type of distress in the right side of the abdomen.

Benign Strictures.—The disturbances attendant on benign stricture are often difficult to distinguish from those of true forms of colitis. Secondary stricture may follow chronic ulcerative colitis of long standing. Syphilitic rectal strictures occur. There is also a traumatic type. In addition to these, there is a group in which there is marked rectal stricture with ulceration, with evidence of old or recent disease above or below the stricture. The proctoscope gives the most accurate evidence of the nature of rectal strictures.

Pellagra.—When well advanced, this syndrome usually affords little diagnostic difficulty. However, the triad of diarrhea, dementia, and dermatitis is not always present and a careful history, going particularly into the matter of dietary deficiency has great value.

Sprue.—In the north temperate zone, varieties of a condition that resembles sprue occur. Even when the large, foamy, bulky stools are expelled, and emaciation, sore tongue, and anemia are present, the syndrome may not be clear cut, and the diagnosis is correspondingly difficult.

Achlorhydria.—A small number of people have diarrhea as a direct result of, or in association with, absence of hydrochloric acid in their gastric content. When all laboratory tests are negative, a therapeutic trial of dilute hydrochloric acid may have value.

Neurogenic Diarrhea.—There is a type of upset of the bowel which occurs when patients are under nervous tension, probably as a result of hyperperistalsis. It has points of similarity to tachycardia of nervous origin.

Allergic Diarrhea.—Loose and frequent stools may follow the ingestion of chocolate, sea foods, buckwheat, milk, some carbohydrates, pork, corn, and fats, or they may be associated with migraine, urticaria, and hay fever. In these cases the stools are usually watery, and contain more or less mucus.

Reflex Diarrhea. — Diarrhea may be

merely a symptom of disease elsewhere in the body, such as appendicitis or cholecystitis. It may occur with menstruation and ovarian disease.

Deficiency Diarrhea.—Aside from the diarrhea that accompanies pellagra and sprue, diarrhea may be associated with strange habits of eating. In these cases the diarrhea usually develops gradually, is of long standing, and is definitely traceable to a change in habits of eating.

Irritable Colon.—I prefer to include here the cases of so-called mucous colitis, and all the synonymous conditions. Jordan has recently substituted the term "unstable colon"; this, perhaps, is even more descriptive. This group of cases presents some of the most distressing clinical problems. The condition is not a primary colonic disease but rather part of a general bodily state. The symptoms of the condition known as mucous colitis are extremely varied. There may be constipation or diarrhea, with abdominal pain and discomfort, often along the line of the large intestine, and associated with various mild to severe affective disorders. Among these may be mental and physical depression, dizziness, headache, loss of weight and appetite, and insomnia. Passage of excessive amounts of mucus from the rectum is common. It must always be remembered, however, that one of the primary functions of the cells lining the large intestine is secretion of mucus and that the amount of this secretion will vary directly with the amount of intestinal irritation, and with the sensitivity of the nervous mechanism involved.

Treatment.—Many types of treatment have had their vogue for chronic ulcerative colitis. All have suggested a groping for specific therapy. The present line of treatment, at the Mayo Clinic, is four-fold:

1. An important phase includes combatting the diplostreptococcus which apparently plays an important etiologic part in this disease. For the less severe cases, treatment with vaccine prepared from the diplostreptococcus, administered subcutaneously, has given encouraging results. More recently, for the severer, more depleted, or acutely ill patients an antibody solution prepared by a simple method of concentrating the immune chronic ulcerative colitis serum has yielded striking change for the better in many cases. The antibody solution has been administered deep in the muscles, twice a day, beginning with small doses, and rapidly increasing their volume. As soon as definite improvement results, gradual substitution of the autogenous vaccine for the antibody solution is made and treatment with the latter is continued in accordance with the patient's progress. It is difficult to comment on "cure" of chronic ulcerative colitis. One thinks more of control of the disease, but by virtue of the fact that the number of controlled cases mounts annually and that some have now gone seven years without a return of symptoms, it seems as if the present form of treatment offers a hopeful outlet for future therapeutic endeavors.

2. A probably very important phase of the treatment is removal of distant foci of infection. Striking immediate improvement as well as much less liability to recurrence, has followed removal of infected tonsils and teeth.

3. Another important phase of the treatment of cases of chronic ulcerative colitis is dietary regulation. As in any chronic depleting form of invalidism, a large variety of easily assimilated foods of high-caloric value is indicated. In just what order, and with what rapidity and urgency the various foods should be offered, is a matter of individual taste. In the less depleted patients, and those who have the disease in a milder form, urging them to eat usually suffices. As cases of greater severity are encountered, the problem of feeding often becomes the most serious one with which the physician has to deal. Patients who have had chronic ulcerative colitis for a long time probably are among the most difficult of all patients to feed. They often have lent ear to many food fads and fancies, or they have been advised not to eat this or that, but more important than all of these, they

have no appetite. Here the well-trained dietitian often can be of great help.

Many of the patients with chronic ulcerative colitis who come to the clinic are ambulatory, but for those whom it has seemed necessary to place in hospital, the following dietary regimen has served well. Feeding is begun with a basic diet of 2,000 calories. It is a graded diet, with periodic increases in foods of various types, so that in the case in which there is average response to treatment, by the twentieth day a full tray containing 3,000 calories of food is served. At the outset, the intake of protein is 60 gm.; by the twentieth day, it is 80 gm. The diet at the beginning is bland, and meat is given from the first. Purée of vegetables is added the seventh day. Milk is added the tenth day. Frequently patients complain of more gas when taking milk, so that it is not included in the basic diet. Cooked fruits are added the thirteenth day. Whole vegetables are substituted for purée of vegetables the seventeenth day. Of course, these are adapted to the case. Cabbage, other stringy vegetables, and seedy fruits are inadvisable. Only a few of the articles of diet have been mentioned here. Other generally accepted foods are given in generous quantities. An effort has been made to mention those foods concerning which there might be some question. Occasionally an acute case or a complication will demand discontinuance of all feeding by mouth. The important thing to remember is that an organ far from the site of the major digestive actions, and a severe infectious disease, are being treated.

Finally, supportive measures, including opiates, one of the powders, occasionally abdominal stupes, hemostatics, tincture of iodine, 10 drops three times a day, by mouth, and other simple measures, seem to have helped in individual cases. Here, also, the need of attention to a depleted nervous system must not be lost sight of.

Surgical interference should be confined to treatment of complications or of that small number of cases which resist medical treatment.

The treatment of intestinal tuberculosis divides itself readily into surgical and medical. For the localized hyperplastic types, surgical resection seems the treatment of choice. For the extensive ulcerative lesions, the usual tuberculous regimen may be carried out, including careful dietary regulation, rest and sun-baths. Pneumoperitoneum and deep roentgen-ray therapy have been used in some centers. Calcium by vein and by mouth has helped selected cases. Arsenic, in the form of treparsol and stovarsol has yielded results in the hands of some. The treatment is far from satisfactory, for one is dealing here, usually, with a late complication of pulmonary tuberculosis.

Of all ulcerative lesions of the large intestine the most satisfactory from the standpoint of treatment are those caused by amebiasis. From the comparatively recent use of ipecac by mouth and enemas of coal oil, has developed the simple regimen of emetin hydrochloride hypodermically and arsenic in the form of stovarsol or treparsol by mouth. Yatren (anayodin) occasionally has found favor. Bismuth-emetin-iodine has helped in selected cases, but the spectacular and lasting results which occur so commonly after the administration of emetin hydrochloride and treparsol make these the drugs of choice.

As long as diverticulosis remains as such, little or no treatment is indicated. The stools should be kept soft by a judicious, bland, anti-constipation diet, and regularity of intestinal movement should be emphasized. Vegetables of low residue, and fruit juices, with the addition of agar or a proprietary laxative which acts by increasing the indigestible bulk of the intestinal content, and known as normacol, are allowed. Fruits with seeds and foods with a high content of cellulose are prohibited. When one or more of the diverticula becomes inflamed, a very different condition obtains. Treatment will depend directly on the severity of the diverticulitis. When an abscess forms and localizes, rest, and sedatives, and at times frequent hot rectal irrigations are helpful. Occasionally colostomy becomes necessary. This is more particularly the case

when complications, such as perforation into a neighboring viscus, occur.

No consideration of treatment of colitis is complete without mention of the general treatment of mucous colitis and irritable colon. Here painstaking and detailed anamnesis may be classed as therapeutic measures. Judicious psychotherapy plays an important part in the treatment. A regular routine of objective investigations is important. Although this malady, if it can be called such, is not dangerous to life, it is responsible for much discomfort, misery, and chronic invalidism. In many cases the response to treatment is very gratifying. Careful analysis, and reëducation of the patient's emotions and mental state probably are among the most important therapeutic efforts. The patient must be brought to realize that his disability is largely functional, and that it is remediable largely through his own efforts. The trouble may have begun during a period of unusual physical or nervous stress and strain.

The next important feature of treatment is regulation of the patient's diet. Because of abdominal discomfort these patients have frequently drifted into the habit of eating in a totally inadequate and most irrational manner. The diet must fit the individual needs. Even for severely constipated patients, a bland, protective diet should be basic. This can be graded up and down, according to necessities. Drugs tending to relax spasm, such as belladonna, may be given in suitable doses. Desensitization to bacterial intestinal flora, after the methods of Dorst, has value in selected cases. Orderly rest, or a restful change from the usual nervous disturbance, is important. Rest in bed is rarely indicated, but providing of pleasant influences and congenial company are important. Physical therapy, hydrotherapy, and thermotherapy have definite places in treatment of these cases.

In summary, the treatment of the patient with an irritable or unstable colon must be individual, and for success of treatment attention to many details is essential.

Discussion

G. R. MAXWELL, M.D., Morgantown: The subject of colitis is one that is neglected by many of us. We do not take a careful history and we treat lightly any information the patient might volunteer about the condition of his bowels.

Dr. Bargen has brought out very clearly the different types of colitis, differential diagnosis, and treatment.

In chronic ulcerative colitis he spoke of a diplostreptococous as apparently playing an important etiologic rôle in this disease. Modesty prevented him from telling us that he was the first to isolate this organism and it has been given his name. It is commonly known as Bargen's diplococcus.

The methods used in combatting this organism are quite interesting. Some recent work along this line has been done at the University of Chicago. They used the antibody solution described by Dr. Bargen. Since January 1, 1932, they have tried it on seven patients with good results in six.

The paper is a most excellent one and brings out points that are of every-day use to us in our work. We certainly appreciate Dr. Bargen's presence and thank him for making the trip from Rochester to be with us.

LABORATORY TECHNIQUE

Sir Almroth E. Wright is best known among scientists as a careful laboratory technician who found a primitive handicraft and made it an exquisitely delicate and exact science. The man of the street associates him with the introduction of preventive inoculation against typhoid.

In the early nineties of the last century, Wright realized that the method of inoculation of living microbes whose virulence had been artificially reduced, employed by Pasteur, could not be applied to typhoid. For numerous years he experimented, seeking to learn how immunity to this disease might be created artificially by the inoculation of dead typhoid bacilli, how many could be injected at a time, at what intervals injections should be repeated and how many injections were desirable. The work was begun in 1895. By 1899 some of the British troops were inoculated regardless of bitter opposition, before they were sent to the Boer War. Opposition to inoculation had its tragic results in the World War when both the German and the French armies were quite unprepared to meet a scourge which cannon fire and bayonet could not conquer. Inoculation was later introduced.

CANCER OF THE LARYNX *

By WAITMAN F. ZINN, M.D., F.A.C.S.
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CANCER is said to be cellular lawlessness[1] and to result from the destruction of the chemical balance of the cell and of the medium in which it is immersed[2]—a constitutional infection or condition, its local manifestations being determined by some continuously applied irritation[3]—an irritation, usually low grade, long continued, not necessarily of bacterial or toxic origin, and yet many times associated with these as an underlying cause.[1] Chronic infections above the larynx are frequently present in cancer of the larynx. Cancer often appears on a field already irritated by syphilis.[3] Excessive abuse of the voice has been a marked characteristic of the occupation of some of the patients who have presented themselves for treatment at my clinic. Cases in point, to be discussed later, are those of a truck driver, a station agent, and a crier of odds in betting rings.

Krishaber classified laryngeal cancer into intrinsic and extrinsic. Growths on the vocal cords and ventricular bands, or in the ventricles and interarytenoid region were defined as intrinsic. The extrinsic group includes tumors of the epiglottis and aryepiglottic folds and tumors in the pyriform sinus and in the post-cricoid region.[4] A so-called mixed group are made up of intrinsic cancers which have spread beyond the glottic margin, or extrinsic cases which have extended into the cavity of the larynx.[5] At first, intrinsic cancer is usually slow in growth, and is located on or near a vocal cord, frequently in its anterior two-thirds. When incipient, it is well localized. Cervical lymphatic involvement rarely occurs until the disease has reached the arytenoids, has extended upward toward the rim, or has perforated the anterior angle of the thyroid cartilage.[2] Extrinsic cancer in all the four situations mentioned, with the exception in some cases of the epiglottis, invades the cervical lymphatic glands at an early stage.[5] The growth and extension through the lymphatics are rapid.

Carcinomas form about ninety-eight per cent of the malignant tumors of the larynx. About ninety-six per cent are squamous-celled and about two per cent are basal-celled tumors.

In ninety per cent of the cases, intrinsic cancer gives immediate notice of its presence in a hoarse or altered voice. Extrinsic cancer rarely gives warning of its presence until well advanced, since cancer is a painless disease in this situation prior to the late ulcerative period, and since it does not at first alter the voice. Its early discovery is usually accidental.[2]

Some fifty patients whom I have examined during the last five years had developed hoarseness at periods ranging from three to twelve months prior to examination. One exception was the case of a station agent who had been hoarse for a number of years.

Another cardinal symptom is cord immobility. This symptom eventually appears. A large number of the cases mentioned above showed immobility of cord.

The clinical classification and the extent of involvement are important factors in guiding the operator's choice of procedure. The disease may be greater in extent than it appears, even after the most meticulous scrutiny. MacKenty made it a rule to add two-thirds to the visible manifestation in estimating its true extent and on the judgment thus formed to select the type of operation thus indicated.[6] Pending the advent of a cure, acting perhaps through the control of cell metabolism, there is only one avenue of escape from cancer, and that is through surgical intervention sufficiently radical to circumvent the disease.[6] The results achieved in the arrest of cancer by

* Read before the West Virginia State Medical Association at Parkersburg, June 23, 1932.

surgery in this field far excel those obtained in any other part of the body.[6]

Late intrinsic cancer is easily recognized; extrinsic cancer is practically hopeless. As I review the histories of patients who, during the last twelve years, have presented themselves at my clinic for examination and treatment, it is appalling to note the large number of cases of advanced malignancy of the larynx which had gone undiagnosed and which were in a hopeless stage of the disease at the time of their admission to the clinic. This fact is particularly lamentable when one considers that in intrinsic cancer of the larynx lymphatic extension is delayed for a period of time and therefore an excellent opportunity for cure is afforded the patient, provided the case is properly diagnosed and given immediate treatment. The delay of the patient in seeking expert opinion has been found to be partly due to themselves, partly due to prolonged and repeated antiseptic treatment, and partly due to many other reasons.

When the larynx and the voice have been normal prior to the onset of the disease, the diagnosis is less difficult. When cancer has become grafted on other pathologic conditions, diagnosis is much more complicated. In advanced disease, one look is often sufficient. In looking for incipient cancer, we look for a single outcropping if it is on the surface, or a single localized bulging if it is deeply situated. The characteristics and behaviour of a laryngeal growth can be learned only after much observation and long continued experience. They are very different in an already diseased larynx from what they are in an otherwise normal larynx. Repeated and careful observation, and biopsy when a positive diagnosis can not be made by observation, are two methods of arriving at a successful diagnosis. Biopsy, however, may fail where only a surface specimen has been secured and has left behind the characteristic pathology which lies deep at the base of the neoplasm. Extension of the disease may take place in any direction.

Other diseases peculiar to the larynx must be excluded. To the trained eye many of these present no difficulty and, by their appearance and behavior are easily recognized. It is not so, however, with syphilis and tuberculosis. These are constantly presenting themselves for identification and differentiation. Combinations of one or all of this pathological triad may occur in the same larynx.[3] A positive Wassermann reaction does not exclude cancer, nor does a negative reaction always exclude syphilis.[2] Syphilis is an esthetic disease. Tuberculosis is a hyperesthetic disease. In cancer, pain is absent until ulceration and secondary infection set in.[3]

Laryngectomy.—The method of cure or local arrest, whatever it may be called, rests with the operator until some cure is discovered for this "tragedy." The several methods of treatment have their several advocates, whether it be radium, x-ray, diathermy, laryngofissure or laryngectomy. One thing in favor of laryngectomy is that extension, discoverable only by microscopic examination after laryngectomy, is prevented from advancing to the inoperable stage or recurring after laryngofissure. And herein lies the advantage of the radical over the conservative mode of procedure.

In England laryngofissure, radium, and x-ray treatment seem to be the methods of choice, while in this country laryngectomy, whether it be of the one stage type or of the two stage type, is preferred.

It has taken some eighty years for laryngectomy, or total extirpation of the larynx, to reach its present stage of efficiency. Statistics show that its progress has been from high mortality to low mortality, from high percentage of recurrences to low percentage of recurrences, from few ultimate cures to a large number of ultimate cures. The patient, it is true, sustains a great loss in the removal of his larynx; but the sacrifice of a part for the benefit of the whole is the toll exacted for the prolongation of his life. If cancer could be diagnosed at its inception, there would be no place for the more radical operations.[2]

The different operative steps in laryngectomy together with some larynges which have

been extirpated, will be exhibited by means of slides.

Voice.—After laryngectomy, it depends upon the individual whether or not he will acquire the habit of swallowing air and using his stomach as a bellows; as he regurgitates the air to his mouth, he forms the words and has a buccal voice. Some can get along very nicely without the use of an artificial larynx; others may find it necessary to use the Mackenty artificial larynx.[8]

Report of Some Unusual Cases.—Male, aged fifty-two years, a clerk who cried the odds in betting rings, had suffered from hoarseness for twelve months. Physical examination was negative. Because of anatomical conditions, it was impossible to visualize the larynx either by indirect or direct endoscopy. Since dyspnea was becoming more marked, I decided to make an exploratory laryngofissure. This revealed below the right cord a large mass which obstructed almost the entire lumen of the trachea. From the gross appearance of the location of the growth, it was deemed best to perform laryngectomy without waiting for the pathologist's report. After a one stage laryngectomy the patient had a most satisfactory recovery. The pathologist later reported the growth to be a chondroma.

This case is presented because chondroma is extremely rare and because great difficulty was experienced in making an examination and diagnosis.

Chondroma belongs to a class of benign tumors which are infiltrative, malignant lesions, but show little or no tendency to metastasize. If small, they may be removed endoscopically; if large, external operation may be required. In six cases Chevalier Jackson found it necessary to advise total laryngectomy for chondroma because of the massive involvement including both the cricoid and thyroid cartilage which obliterated the larynx.

Extrinsic squamous-celled carcinoma:

A station agent, aged sixty-one years, had been hoarse for a number of years. Nine months before seen by me, a large pedunculated papilloma attached at anterior commissure had been removed after biopsy. The report stated a benign growth. Three months later, with no removal of specimen, a tracheotomy was performed to relieve dyspnea. When first seen by me, both pyriform sinuses were obstructed and the patient's larynx was filled with a growth of the size of a hen's egg, which growth extended out around the tube, making it impossible to remove the tube. Bleeding was free when wiped with gauze. The patient was greatly emaciated and unable to take any nourishment. The patient was given rectal feeding and glucose solution intravenously. Two days later laryngectomy with wide dissection of neck glands was performed. The patient had a slow recovery, was able to enjoy life, and gained in weight. Six months later, however, he died of pneumonia.

You will note that the first biopsy showed benign growth. The second biopsy should have been made sooner. The growth became extrinsic. At the time of the first biopsy, the case was a favorable one for operation.

Mixed type, squamous cell epithelioma:

A truck driver, aged sixty-three years, had been treated for hoarseness for a year. At times he was thought to have asthma. Six weeks before I saw him, a tracheotomy had been done to relieve dyspnea. He wore a tracheotomy tube, had lost twenty-five pounds in weight, and was generally emaciated. There was discovered a large mass involving the right cord and extending from the anterior to the posterior commissure. The arytenoid was edematous and the right pyriform sinus was partly obstructed. After a one stage laryngectomy, the patient made a very satisfactory recovery and gained twenty-two pounds in weight in two months. Four months later, he had a hemorrhage from the trachea. Examination showed a growth near the bifurcation of the trachea. A biopsy revealed a squamous cell epithelioma. The use of x-ray and diathermy controlled the bleeding. The patient died from terminal pneumonia.

The case was of long duration. The tracheotomy done six weeks previously lessened the patient's chances of recovery.

Squamous cell epithelioma approaching mixed class:

Female, aged sixty-seven years, had always enjoyed good health. Three months prior to my examination she was attacked with slight hoarseness and cough, without loss of weight. Physical examination showed obesity, thyroid gland enlargement, kidney function 38; otherwise negative. Laryngeal examination revealed a small, riddish area on the right cord, the size of a shot, and posterior third of cord fixed. There was some swelling of the arytenoid on the same side.

After a one stage laryngectomy patient made a very satisfactory recovery and has shown no signs of metastasis.

Comment: Rare in female. The location of the tumor suggested that it would soon become one of mixed type and extend rapidly beyond surgical limits. The largeness of the thyroid gland made the operation more difficult.

Conclusion.—In view of what you have heard and will see, I do not think any doubt will exist in your minds as to the vital importance of an early diagnosis, and that persistent hoarseness, especially in one of advanced years, should arouse grave suspicion. Infections of the mouth should invoke the most careful scrutiny. As a severe type of pyorrhea is often associated with cancer of the mouth, throat, larynx and esophagus, this disease should receive the most meticulous attention and treatment.

Discussion

Wes. C. Thomas, M.D., Huntington: Cancer of the larynx is a very serious condition and not a rare one. It is a disease that we all dislike to see, but one that we should enjoy discussing—for this is the only way we have to improve our methods of diagnosis and treatment.

It is a fact that most cases of the intrinsic and all cases of extrinsic type are very difficult to diagnose early. It is a fact also that we hesitate too often to suspect so serious a disease when confronted by such trivial complaints as difficult swallowing between meals when there is very little to be swallowed, and no trouble at meals when food is swallowed, sensation of a lump in the throat at times, tired feeling after moderate use of voice, and occasional hoarseness or alteration of voice.

Chronic nasal infection causes chronic catarrhal laryngitis with frequent acute exacerbations, but in these cases too we should be ever vigilant for other signs of cancer, for the two very often occur concurrently. It is my opinion that the early recurrent hoarseness in cancer of larynx is always due to catarrhal inflammation, secondary to nasal infection. The family history should, I believe, be mentioned. History of cancer in the family of the patient in whom cancer is suspected would at least spur one on to a more careful study of the case, since I believe about 25% of cases of cancer give a history of cancer in the family.

Extrinsic cancer of the larynx is hopeless, chiefly because it is impossible to diagnose it early. This fact should encourage all laryngologists to constantly bear this condition in mind and endeavor to learn more of its nature; and I am certain that our duties are very definite in cases where a biopsy examination has shown a benign growth in the larynx. These patients should be watched carefully, and repeatedly advised of the possibility of a malignancy developing in such cases.

Cases with recurrent laryngitis, benign growth of the larynx, constant sensation of "lump-in-throat," dull pain or tired feeling on use of the voice, should be advised to use the voice carefully, and discontinue any trade or profession calling for excessive use of or abuse of the voice. This includes lawyers, clergymen, actors, army officers, salesmen, hucksters, school teachers. It is a very serious mistake to remove a benign growth from the larynx of an individual engaged in any occupation requiring excessive use of the voice, and allow him to return to the same work.

The only good results I have seen in treatment of cancer of the nose and throat have been obtained by radical surgery. The apparent good accomplished by x-ray and radium have been followed by early recurrence in all cases I have been privileged to see.

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TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association.

THE ROLE OF EMOTION IN TUBERCULOSIS

Emotion that remains bottled up exerts a harmful physiological influence, especially so on the tuberculous person. Unfortunately, he can not work off his emotions or shift his interest to another scene. The disease itself inevitably brings about emotional strains involving business relationships, breaks in family ties, and financial worries. In his segregation and enforced leisure the patient broods—and his problems become emphasized and distorted. To adjust the patient's state of mind is an essential therapeutic requirement in the "cure." Mary B. Eyre has studied the rôle of emotion in tuberculosis from the psychological approach. Her findings, presented at the latest annual meeting of the National Tuberculosis Association, are here briefly summarized.

The human organism responds as a whole to its internal and external environment. We need not separate mind and body (much less soul and body), but regard the human individual as trying to get along with the use of all of his functions, endowment and experience.

His functions include not only his feelings, but the use of his brain. Stirred-up feeling is known as emotion, and implicit in emotion is *energy*, which is always dynamic. The individual who experiences emotion is therefore *ready to act*. Researches have demonstrated that the sympathetic division of the autonomic nervous system, through the adrenal glands (and possibly other tissues), prepares the body for activity at the same time that the individual is under emotional stress. If the discharge of this energy should not take place, then the preparatory processes become disturbers, and disrupters of the organism.

Each one of us needs at least to feel safe. Anything which menaces our bodily, mental, or financial security, sets up at once a state of tension, which disintegrates our assembled forces in fronting our world. In the weak and timid person, he who has never learned self-reliance or known what it means to think well of himself by reason of success due to his own efforts, *the sense of his inadequacy* is always his first response. To tell him "not to worry" and to "control his emotions," far from helping, usually increases his tension without showing him how to release it. Something detrimental does happen to all responses of the individual, through worry; something beneficial takes place as inevitably through the building up of the sense of security. Metabolic rate of plus 124, with pulse rate of 112, was changed to basal rate of minus 3, pulse 72, within twenty-four hours, in an individual whose anxiety ever her financial safety was relieved meanwhile.

Of all the emotions, fear seems to be the predominating one. The characteristim optimism which is generally attributed to tuberculosis was found in a number of observed tuberculous patients to be compensatory to an underlying fear and dread of non-recovery, which they resolutely refused to admit to themselves or to acknowledge to others. Is the hopeful state observed in many tuberculous patients due to a specific toxin of the tubercle bacillus? It is more simply explainable by the defense mechanism aroused by fear, superimposed upon the general biological stimulation which is the body's reaction against this bacillus.

Measuring Emotional States. — Even though measures of precision have not yet been evolved for emotional states, it is a step in the right direction to assemble the evidence, and to compare symptoms involving strong feeling, with objective physical findings. Such correspondence can be observed in the physical field, in rise or fall of temperature, in metabolic index, and in functions governed not only by the vegetative nervous system, such as digestion and elimination, but by the sympathetic division of the autonomic as well, including, as Cannon has shown, heart acceleration, respiratory change, pilomotor reflex, endocrine activity, increased blood sugar and hormone liberation. To these may be added as possible signs, the healing or increase of cavitation, and other reparative or destructive processes of the body, as revealed by x-ray and chemical analysis.

It would seem reasonable to ask of any measures which set out to regulate emotion, that they should prove their validity by producing an effect upon the general bodily well-being of the patient.

Eighty-seven tuberculosis patients were studied. Although a complete comparison with physical symptoms was not made, it would be possible to check the records of emotional behavior with the

accurately kept physical histories. The net results of this study, based on the answers to four inclusive question, were in terms of social adjustment.

Fear was found to be the chief factor in emotional instability, present, to some detectable extent, in all but two instances. One of these was a patient who had been told that as "a light case" she would be ready to go home, as soon as she recovered from an appendactomy which had brought her to the acute unit. Her attitude was quietly relaxed, without tension of any sort, either of marked cheerfulness, stoicism, or depression. It was almost startling to find a patient who felt no need of any form of defense against fear.

No adequate explanation can be offered for changes in temperature which accompany emotional excitement, or its release, other than the relationship between the autonomic nervous system and endocrinal activity. Cannon points out that homeostasis of body temperature is regulated in part by the sympathetic, which also influences the output of adrenal and thyroid and pituitary glands, the governors of muscular tonus, and, indirectly, oxygen intake. Muscular action results in heat production, which warms the blood; shivering, pilo-motor reflex, and sweating, are all heat regulating devices directed by the sympathetic, which also responds to emotional excitement, of either sudden or long continued duration. Thus the whole mechanism is in such delicate adjustment, that change in any factor could presumably cause imbalance.

Re-Educating the Emotions.—Outlets must satisfy the inmost aspirations of the individual, and carry on his energy in channels appropriate to his needs. It is not enough merely to tell him to "work off" his excess emotion. It must be used creatively after his heart's desire, in some fashion.

Dr. Cannon points the way physiologically, by showing the disrupting effects upon an organism prepared by emotion for violent action, if the physical action be deferred or prevented. He stops at that point. The principle can be carried further, to provide adequate means by which the excited organism *can* find use for the energy which it is prepared to expend, through interests fitted to its intellectual level.

To warn a patient against giving way to his feelings, without showing him how to bring about this control, is but to increase his strain; just as to beg him when in great bodily fear, "not to be afraid," usually augments his terror.

Re-education of the patient, in the sense of helping him to understand the sources of his emotional stresses in order that he may know how to re-route their component energy, is the most practical therapeutic aid for the emotional problems of tuberculosis. The individual must first be helped to face his difficulties, and to identify the feeling-habits in himself (usually dating back over long periods) which led to his failure; he must be shown how to substitute new feeling-habits, which will lead to better adjustment; how to rely upon himself, and become emotionally grown up; and finally, how to find adequate constructive outlets for his emotional energy. In bed patients, these outlets must necessarily be through mental instead of physical channels.

Optimism that is based on confidence in the recuperative powers that are within the organism, is a different thing from the defense against fear, and is a tremendous asset which therapeusis can not afford to overlook. If fear be faced, and not run away from by pretending it does not exist, it can be dealt with adequately—*The Rôle of Emotion in Tuberculosis,* Mary B. Eyre, Trans. of the Nat. Tuberc. Assn., 1932.

EYE TRANSPARENCY

Too long hours of continuous use of the eyes should be avoided by a rest at intervals, if only for a few minutes, at which time they can be benefited by being bathed with ordinary cold water from the faucet, Dr. Sol Rosenblatt explains in "Eye Hygiene and Heat," an article appearing in the December issue of *Hygeia,* the Health Magazine.

It is the heat that is generated over a long period of excessive use of the eyes that causes the eyes to become tired. Heat affects the eyes in numerous ways, Dr. Rosenblatt explains. The heat generated by excessive use of the eyes over long hours, added to the ordinary body heat; the heat of fever repeated over a period of years; the heat of brilliant sunlight or too intense artificial light, and the heat of furnaces over a period of time are detrimental to the function of the eye.

Nature provides a safeguard in a manner somewhat similar to that of the water-cooled motor. Transparent fluids are circulated within the eye, and the anterior surface of the eye is bathed with fluid coming down from the tear gland above the eye. The peculiar special function of the eye requires transparency, and excessive heat destroys that quality; the loss of transparency is fatal to the function of that special organ, even though its form and strength are fully regained.

PRESIDENT'S PAGE

AT THE beginning of my tenure of the presidential office I wish to express to the members of the West Virginia State Medical Association my sincere appreciation of the honor that you have bestowed upon me. It is a responsibility that can not be taken lightly. It is my earnest hope that I may be able to preserve the ideals of my predecessors and carry on the present work creditably.

Our retiring President, Dr. Albert H. Hoge, conducted our affairs during the preceding year with such great vigor and enthusiasm that it will be difficult to follow in his stride. I want to take this opportunity to congratulate him on the success of his administration and to thank him for his tireless efforts in behalf of our Assocaition.

One problem which deserves our consideration during the ensuing year relates to the deficiency in our State Compensation Law which permits industry to evade responsibility for medical and hospital costs in connection with industrial accidents.

Section 27, paragraph (c) of the West Virginia Compensation Law reads as follows: "Notwithstanding anything hereinbefore contained, *no payment* shall be made out of the Workmen's Compensation Fund for medical, surgical, or hospital treatment for an injured employee, *if said employee be entitled under contract connected with his employment or by reason of a subscription list to medical, surgical, or hospital treatment* without further charge to him. . . " Referring to the italicized portion above, it is easy enough to understand how it is possible for industry to avoid medical and hospital costs of industrial accidents in our state.

Contrast the Ohio law with ours—Section 1465-94: " . . . *No agreement by an employee to pay any portion of the premium paid by his employer into the state insurance fund shall be valid, and any employer who deducts any portion of such premium from the wages or salary of any employee entitled to the benefits of this act shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not more than one hundred dollars for each such offense.*"

In the United States there are forty-four states with Compensation Laws. Forty-one of these states definitely fix the employer's liability for the medical and hospital costs of industrial accidents. Washington and Oregon provide for such costs to be divided between employer and employee. West Virginia is the one state in the Union which allows the employer to force the employees to pay the costs of their industrial accidents. Isn't it about time for this evil to be corrected?

D. A. MacGregor

President.

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THE A. C. S. SURVEY

The American College of Surgeons' survey of industrial medicine in West Virginia, made by Dr. M. N. Newquist, is published in this issue of the JOURNAL. We hope that every member of the Association will read and study the Newquist report and discuss it with his fellow practitioners. Whether we agree with all the findings or not, we should remember that the survey presents a cross section of medical practice in this state as seen by an impartial outside observer.

We present herewith the conclusions reached by the American College of Surgeons from the facts presented in the report.

1. The West Virginia Workmen's Compensation Act be so amended that it states with clarity the responsibility of the employer to the employee for the care of compensable injuries, and that the costs of medical, dental, surgical, and hospital care, including artificial aids or other benefits, for compensable injuries be cared for through the State Compensation department and fund, according to the original intent and purpose of the law.

2. Inasmuch as contract practice has its good points but is also subjected to so many abuses the American College of Surgeons can not give a blanket endorsement to this type of practice. Each case must be judged upon its own merits. Some of the good points could well be amplified. The abuses of contract practice should be abolished.

3. All general and special hospitals in the State of West Virginia should comply with the minimum standard of the American College of Surgeons.

4. The three state miners' hospitals should be abolished from competition with private enterprise. McKendree Emergency Hospital should be entirely abandoned on account of its inaccessibility, inadequate equipment, and poor state of repair. Welch and Fairmont Emergency Hospitals should be utilized for some useful purpose, such as for crippled children, for the aged and infirm, or as general hospitals for the indigent only. If used for the latter purpose, it should be operated and maintained by the county or community that is directly benefitted.

THE MINERS' HOSPITALS

During the recent political campaign the Democratic party in West Virginia went to the voters with a tax reduction platform. The Democratic party was unusually successful. There is every reason to believe, therefore, that the Democratic legislature will make some effort to abolish the three miners' hospitals located at McKendree, Fairmont, and Welch.

The abolition of these hospitals has been advocated in the state press on more than one occasion. In recent months a number of the most influential newspapers in West Virginia have taken a decided stand against the continued operation of the miners' hospitals and there is said to be a strong feeling in legislative circles for their abolition. The arguments against these three hospitals are too well known to repeat here.

The question arises, however, as to just what position the West Virginia State Medical Association should take in this proposed legislative attack. Unquestionably the miners' hospitals are operated in direct competition with the practice of medicine and hospitalization. Nevertheless, if the Association should lead the fight against the miners' hospitals, it would probably result in a considerable amount of unfavorable publicity. Organized medicine would probably be accused of a selfish, mercenary motive in attempting to destroy open state competition with medical and hospital practice.

If the Newquist survey, made under the direction of the American College of Surgeons, is accepted by the Association we would then be committed to a policy directly opposing the miners' hospitals. As a matter of fact, we are already committed to such a policy by a resolution presented and adopted at the Clarksburg meeting. The Newquist report, therefore, would simply place us in a position to present the findings of the American College of Surgeons through the proper legislative channels. We quote from the Newquist report as follows:

"In 1901 the State of West Virginia built three miners' hospitals in the southern, central and northern coal fields to serve the ill and injured who were connected with the coal industry. These hospitals . . . filled a great need in those isolated communities in their earlier years, but they have served their purpose since those communities are now adequately served by private hospitals. At the present time these hospitals which were built and are maintained through taxation are in direct competition to private enterprise. One of these hospitals has contracted with several coal operators to provide hospitalization at low cost through the 'check-off' system. Another hospital has returned a profit to the state of over two hundred thousand dollars within the last few years, received largely for the care of compensable injuries.

"Due to the fact that these hospitals and their staffs are maintained by the state, they are in a position to and do offer such reduced rates for hospitalization, including medical and surgical services, as to present a serious situaton of unfair competition.

"About ninety per cent of the patients using the miners' hospitals lived in their immediate vicinity. The question then arises as to why the people of the state should operate hospitals for the benefit of three local communities.

"The miners' hospitals should be abolished as such. One of these hospitals is so inaccessibly located, inadequately equipped, and in such poor state of repair that it has been removed from the approved list of the American College of Surgeons. . . . It should be entirely abandoned. The other two hospitals . . . should be utilized for some useful purpose—such as for crippled children, for the aged and infirm, or as general hospitals for the indigent only. If used for the latter purpose, it should be operated and maintained by the county or community that is directly benefitted."

Whatever attack is directed at the miners' hospital, we hope it will be one of complete abandonment rather than partial transformation. If they serve no useful purpose, then get rid of them. That is the first and elementary step. After they are abolished we will have plenty of time to consider what will be done with the buildings and grounds. If the state wants to transform these institutions into crippled children's hospitals or homes for the aged and infirm, well and good. We will help in the transformation. But that is not the question at this time. The question is, are these miners' hospitals serving a useful purpose? If not, let's get them off our hands.

Our guess is that the Association will not show any unusual activity in seeking the abolition of these three hospitals. We feel, however, that the Association should turn over the findings of the American College of Surgeons survey to any and all members of the state legislature interested enough to inquire.

NEW SCHEMES OF INSURANCE

During this present era of business depression, it is almost inevitable that every sizable community in the state will be visited by some new plan for paying doctor and hospital bills. These new schemes are now springing up like mushrooms in every section of West Virginia.

If we are to have such schemes, it is of vital importance that our component county societies take an active part in their guidance and control. It is far easier to guide such plans into non-competitive, free-choice channels than it is to keep individual doctors from bartering their services to unethical corporations. In almost every community there are a few doctors who, through necessity rather than choice, will lend their support to questionable methods of medical practice. It is much wiser to remove the cause of temptation than to warn against it.

The code of ethics of the American Medi-

cal Association is the yardstick by which we should measure all new ventures into the economics of medical practice. We quote as follows: "Solicitation of patients by physicians as individuals, or collectively in groups by whatsoever name these be called, or by institutions or organizations, whether by circulars or advertisements, or by personal communication, is unprofessional."

The Association Council, at its meeting on December 13, officially recognized the situation in this state and adopted the following resolution for the benefit and guidance of all county societies:

Whereas, it has come to the attention of the Council of the West Virginia State Medical Association that certain members of different localities have recently instituted plans of medical and hospital insurance, and

Whereas, it is reported that they employ paid solicitors to secure patients for their insurance groups, and

Whereas, solicitation attracts and entices patients to their hospitals and away from other hospitals, and

Whereas, it is further reported that these plans solicit surgical patients for themselves and members of their hospital staffs although such patients, at the time of solicitation, are the patients of other surgeons, and

Whereas, such plans place medical practice upon a basis of commercial barter rather than a basis of scientific merit;

Therefore, be it resolved, that the Council of the West Virginia State Medical Association go on record as being strongly and vigorously opposed to such plans as outlined above, and

Be it further resolved, that this Council recommend to the local medical societies, of which they are members, that it determine if the above mentioned reports be true, and if so, to take immediate steps to either stop their health insurance plans or else bring expulsion charges against them;

Be it further resolved, that we conform to the Code of Ethics adopted by the American Medical Association and disapprove of any action by a member that does not conform to this code.

OBITUARY

DR. CLIFFORD W. SPEROW

Dr. Clifford W. Sperow of Martinsburg, 57 years of age, died suddenly at his home on December 8 from angina pectoris. Funeral services were held from the residence on December 11 and interment was made in the family plot at Martinsburg.

Dr. Sperow was born in Martinsburg and received his early education there. He graduated from the Medical Department of the University of Virginia in 1898. After three years' further study he returned to Martinsburg in 1901 and continued in practice there until his death.

The deceased was a member and an active worker in his County Medical Society and in the State Association. He will be remembered by many as one of the genial hosts at the Association meeting in Martinsburg in 1929.

DR. E. A. WINTER

Dr. Emmett A. Winter, 72 years of age, was killed in an automobile accident at Racine, West Virginia, on December 1. He resided at St. Albans and practiced throughout that section. Funeral services were held on December 3 and interment was made in the Teays Hill cemetery.

Dr. Winter was graduated from the University of Louisville School of Medicine in 1909 and was licensed to practice in West Virginia the same year. He is survived by five sons and four daughters.

DR. THOMAS B. CRITTENDEN

Dr. Thomas B. Crittenden of Kitzmiller, Maryland, died of carcinoma of the stomach on June 19 at the age of 70 years. Although residing in Maryland, he was a member of the Barbour-Randolph-Tucker County Medical Society from 1907 until he was forced to retire from active practice in 1930. He was well known throughout the northern section of the state.

DR. S. K. OWENS

Dr. S. K. Owens, a charter member of the Fayette County Medical Society, died at his home in Montgomery on December 3 following a long period of ill health. He was 66 years of age and his death occurred on the date of his birth. He is survived by his widow, one son and one daughter.

In addition to his medical practice, Dr. Owens was a director of the Montgomery National Bank and a former coal operator. He was widely known throughout the New River section. He retired from active practice a number of years ago.

The deceased graduated from the College of Physicians and Surgeons, Baltimore, in 1891, and was licensed to practice medicine in this state the same year. Funeral services were held from the residence on December 5 and interment was made in the Spring Hill cemetery at Montgomery.

DR. WILLIAM B. GASTON

Dr. William Bryan Gaston, 34, of Clarksburg, died at his home on December 12 from pneumonia. He had been associated with his father, Dr. William Gaston, in the practice of medicine since his graduation from the School of Medicine, University of Maryland, in 1925. He was one of the most prominent of the younger doctors of Clarksburg and his untimely death was a severe shock to his family and his host of friends both within and outside the profession.

Dr. Gaston was born at Good Hope, Harrison County, on May 27, 1897. Following his early education, he entered West Virginia University where he studied until the outbreak of the World War. He enlisted and served overseas, returning to America in June, 1919. He again entered the University and was graduated in the class of 1922. He graduated from the University of Maryland in 1925, and served as interne in the University hospital for one year.

A resolution of sympathy was adopted at a special meeting of the Harrison County Medical Society and the Society members attended the funeral in a body. "In the passing of Dr. Gaston," read the resolution, "the members of the Harrison County Medical Society sorely regret and feel his loss to their local profession, and extend to the bereaved family their sincere sympathies."

MANUFACTURE OF MEDICINES

The value of medicines manufactured in the United States yearly totals $500,000,000. The 1930 imports of raw materials amounted to $114,934,000. These statistics are taken from an article, "How Some of Our Medicines Are Made," by Joseph Creamer in the December *Hygeia*. In fact, Mr. Creamer points out, during the last year $3,046,000 worth of licorice root alone was used in the manufacture of various medicines.

COUNTY SOCIETY NEWS

MERCER COUNTY

An interesting meeting of the Mercer County Medical Society was held at the West Virginia Hotel, Bluefield, on the evening of December 17, at which time the annual banquet was given. Both doctors and their wives were in attendance and the banquet was served at 6:30 o'clock, P. M.

The scientific program was presented by Dr. Charles T. St. Clair, Dr. Harry G. Steele, and Dr. C. J. Reynolds. Dr. St. Clair's subject was "Otitis Media, Acute and Chronic." Dr. Steele talked on "Binovular Twins," with report of a case. Dr. Reynolds' subject was "Treatment of the Pyhertrophied Prestate by Resection." This made a most excellent and interesting scientific contribution which was discussed at length by the members present.

R. R. STUART, Secretary.

MARION COUNTY

The Marion County Medical Society held its regular monthly meeting Tuesday evening, November 29, in the Fairmont Hotel.

Dr. H. A. Heise of Uniontown was the guest speaker and gave a paper on "Booze and Gasoline." He has done a great deal of experimental work on the effect of alcohol on automobile drivers. In this, he has had the aid and coöperation of the Pennsylvania State Police.

In his experiments, five to eight ounces of 104 proof bonded whiskey (52% alcohol) were given to the drivers. They then had to drive an auto over a roped-off stretch of road on which a number of packing cases were so placed that they had to pursue a zigzag course. Their reaction time was determined as was also the time interval that elapsed after their feet touched the brakes until the brakes began to check the momentum of the car. The distance the auto traveled after the brakes had applied was measured. At intervals, specimens were collected of blood and urine, and their concentration of alcohol determined.

Dr. Heise's conclusions were that booze and gasoline do not mix. Although a number of the drivers had asserted that they could drive better when drunk than sober, this was not found true. The chief danger, according to Dr. Heise, was the almost immediate effect that alcohol had upon the higher brain centers such as the intelligence. Thus drivers failed to answer questions intelligently and

several of them did not remember any collisions with the packing cases that had occurred a short time before. Their reaction time was lengthened and their response to unforeseen circumstances was retarded.

Dr. Heise's paper was interesting and instructive. He recently presented his findings before the Pennsylvania State Medical Society, so that his paper will not be available for our JOURNAL. From the medico-legal aspect, this is an important step forward. Already the courts in Uniontown are recognizing a concentration of .2% alcohol in the urine as an arbitrary standard for drunkenness.

The attendance was large. Visitors included Dr. Shafer of Grafton and Dr. Chenoweth of Wendel.

CHARLES T. FRANCIS, Secretary.

G. H. H. M. SOCIETY

The annual election of officers of the Grant-Hampshire-Hardy-Mineral County Medical Society was held at the Keyser meeting on the evening of November 18, 1932. Dr. Paul R. Wilson of Piedmont was elected president for the coming year. Vice-presidents elected were: Dr. J. B. Groves of Petersburg, Dr. Harry Rollings of Wardensville, Dr. James Dailey of Romney, Dr. James T. Wolverton of Piedmont, and Dr. S. B. Johnson of Franklin. Dr. T. C. Giffin of Keyser was reëlected secretary-treasurer.

Delegates to the state meeting at Charleston next May will be Dr. W. H. Babb and Dr. M. H. Maxwell, both of Keyser. Alternates are Dr. Thomas Bess of Keyser and Dr. Harry Rollings of Wardensville.

T. C. GIFFIN, Secretary.

LEWIS COUNTY

Dr. E. R. Cooper of Troy was elected president of the Lewis County Medical Society at the Weston meeting on December 14. Dr. Cooper will succeed Dr. C. C. Denham of Weston, who served during the past year. Other officers included Dr. L. C. Corder, Jane Lew, vice-president; Dr. H. M. Andrew, Weston, reëlected secretary-treasurer, and Dr. O. L. Hudkins, Weston, censor.

Delegates to the state meeting at Charleston in 1933 were also elected at this meeting. They are Dr. Cecil Denham and Dr. J. E. Corkrean, both of Weston. Alternates are Dr. C. B. Rohr and Dr. E. A. Trinkle, both of Weston.

The scientific program was presented by Dr. D. A. MacGregor of Wheeling, president-elect of the state society. Dr. MacGregor gave a most excellent and enlightening paper on "Industrial Medicine in West Virginia," which was widely discussed by the members present.

H. M. ANDREW, Secretary.

BARBOUR-RANDOLPH-TUCKER

The regular meeting of the Barbour-Randolph-Tucker County Medical Society was held at the Y. M. C. A. Building, Elkins, on October 25, 1932. The meeting was well attended by a majority of the members and three visitors from nearby societies.

The scientific program was rendered by Dr. C. H. Hall, Elkins, on "West Virginia's New Medical Liquor Law"; Dr. W. E. Whiteside, Parsons, on "The Management of Pneumonia in Rural Practice"; Dr. B. I. Golden on "Intra-Abdominal Symptomatology"; and Dr. W. M. Junkin with a report of an interesting case of hernia.

Dr. H. H. Bolton of Pierce was elected President of the Barbour-Randolph-Tucker County Medical Society at the December 15 meeting and will succeed Dr. O. L. Perry on January 1. Vice-Presidents are Dr. H. K. Owens of Elkins, and Dr. C. B. Williams of Philippi. Dr. Russell S. Wolfe, Elkins, was elected Secretary-Treasurer.

Three censors were also elected at the December 15 meeting, representing the three counties comprising the society. They are Dr. O. L. Perry, Randolph County; Dr. C. B. Williams, Barbour County, and Dr. J. L. Miller, Tucker County.

W. M. JUNKIN, Secretary.

KANAWHA COUNTY

Dr. G. G. Irwin was elected president of the Kanawha Medical Society at the December 13th meeting at Charleston and will succeed Dr. W. P. Black, who served during 1932. Other officers elected were Dr. H. L. Robertson, vice-president; Dr. G. H. Barksdale, censor, and Dr. M. F. Petersen, reëlected secretary-treasurer. Installation of the new officers will take place at a special dinner meeting on January 10, 1933.

One of the best programs of the year was presented at the December 13th meeting. Dr. D. A. MacGregor of Wheeling, president-elect of the State Society, gave a highly instructive paper on "Contract Practice in West Virginia." Discussion was opened by Dr. W. S. Fulton, Wheeling; Dr. Albert H. Hoge, Bluefield, president of the State Society; Dr. W. V. Wilkerson, Montgomery, and

others. A large number of the members of the Association Council were guests at this meeting.

M. F. PETERSEN, Secretary.

LOGAN COUNTY

The Logan County Medical Society held its annual banquet and election of officers for 1933 on December 21 at 6:30 P. M., at the Aracoma Hotel, Logan, with 17 members and visitors present.

The following officers were elected: President, Dr. B. D. Smith of Omar; Vice-president, Dr. R. W. Roberts of Man; Secretary-Treasurer, Dr. Fred E. Brammer of Dehue; and members of the Board of Censors, Dr. J. T. Ferrell of Chapmanville, Dr. Walter E. Brewer of Logan, and Dr. W. H. Parker of Braeholm.

Applications for membership were received from Dr. B. L. Hume of Mallory, and Dr. John E. Whitehill of Earling. The society adopted a resolution of thanks to the Hatfield-Lawson Hospital for their generosity and courtesy in entertaining the society for its monthly meeting during the last year.

The secretary-treasurer gave a résumé of the activities of the society for the past year and his financial report. There were 37 paid-up memberships for 1932—two of these being members for only the last quarter of the year and four others left the county several months ago, and one has been absent for the whole year, which leaves us 30 members who have been members and in the county for the whole year. Of this number our average attendance at meetings has been 17 members. We have laso averaged four visitors including the guest speakers, or a total average monthly attendance of 21 at our society meetings.

It seems to be the consensus of opinion of the members that the society is closing one of the most successful years in its history.

During the banquet the society was pleasantly entertained by Mrs. C. H. Chapman of Logan, at the piano.

FRED E. BRAMMER, Secretary.

OHIO COUNTY

Two very interesting and instructive meetings of the Ohio County Medical Society were held at the Ohio Valley General Hospital, Wheeling, in December. The first meeting was held on December 2, at which time Dr. Joseph F. McCarthy of New York City presented an excellent paper on "The Concern of General Medicine in Urology." Discussion was opened by Dr. William McCuskey, Dr. Richard Gill, and Dr. A. L. Jones.

Dr. William S. Middleton of the University of Wisconsin, Madison, was the scientific essayist at the December 16 meeting. His subject was "Oxygen Therapy in Cardio-Respiratory Conditions." Discussion was opened by Dr. John W. Gilmore, Dr. Robert J. Snider, and Dr. H. R. Sauder.

RUSSELL C. BOND, Secretary.

EASTERN PANHANDLE

Dr. Harry M. Stein, associate professor of medicine, University of Maryland, presented a very interesting paper on "Clinical Diabetes" at the regular quarterly meeting of the Eastern Panhandle Medical Society held on December 14 in Martinsburg.

Dr. Stein placed emphasis upon the fact that the diabetic patient should have a comfortable diet rather than one subjected to severe restrictions. Considerable discussion took place following the reading of the paper.

The following officers were elected for the term of 1933: Dr. M. H. Porterfield, Martinsburg, President, succeeding Dr. R. B. Talbott; Dr. R. E. S. Taylor of Paw Paw, Vice-President; Dr. J. J. Pittman of Charles Town, Vice-President; Dr. J. M. Miller of Charles Town, Censor; Dr. Edwin Cameron of Martinsburg, reëlected Secretary-Treasurer.

Tributes were paid to the memories of the late Drs. James A. Duff and Clifford Sperow—both of whom were members of the society.

Drs. E. H. Bitner, G. O. Martin, and V. S. Glover were named a committee to prepare resolutions of respect to be sent to the families of the deceased.

Dr. T. K. Oates gave a brief report of the proceedings of the Council at its recent meeting in Charleston.

It was decided to hold the spring session in Martinsburg. EDWIN CAMERON, Secretary.

CABELL COUNTY

An interesting meeting of the Cabell County Medical Society was held at the Hotel Pritchard, Huntington, on the evening of December 8 with an excellent attendance. The scientific program was presented by Dr. Walter E. Vest and Dr. R. J. Wilkinson, both of Huntington.

Dr. Vest's subject was "Lues of the Stomach," and Dr. Wilkinson spoke on "Carcinoma of the Sigmoid," treated by the Coffee-Humber method. Both of these papers were widely discussed by the members present.

W. W. STRANGE, Secretary.

HANCOCK COUNTY

Dr. M. H. Powers of Weirton was elected President of the Hancock County Medical Society at the December meeting to succeed Dr. R. L. Focer of Holliday's Cove. Dr. Powers will take over the duties of office on January 1. Dr. J. E. Richmond, Weirton, was elected Vice-President, and Dr. F. B. Harrington, Weirton, was reëlected as Secretary-Treasurer.

Three censors were also elected at the December meeting. They are Dr. G. H. Davis, Weirton; Dr. A. E. McClue, New Cumberland, and Dr. A. B. Rinehart, Weirton.

F. B. Harrington, Secretary.

PARKERSBURG ACADEMY

Dr. R. H. Wharton of Parkersburg was elected President of the Parkersburg Academy of Medicine at the regular meeting of the society on December 1. Dr. Wharton succeeds Dr. R. H. Boice, who has just completed a most successful administration.

Other officers elected at the December 1 meeting were Dr. A. M. Dearman, Parkersburg, Vice-President, and Dr. John T. Goff, Parkersburg reëlected Secretary-Treasurer.

John T. Goff, Secretary.

TONGUE PRINTS

Tongue prints on smoked paper are said to show the course of certain diseases, such as pernicious anemia, pellagra, sprue and anemias due to pregnancy, tapeworm infestation, or certain other conditions. This new method, which may be the means of revealing important facts about the cause of the diseases, was reported by Dr. William S. Middleton, Associate Professor of Medicine at the University of Wisconsin Medical School, at the meeting of the American College of Physicians.

Apparently the different types of anemia, pellagra, sprue and certain other conditions are related through some common but still unknown factor; some vital substance, for example, may be lacking in the body to cause its incidence. The condition of the tongue is one thing which all these diseases have in common. In the case of the treatment of pernicious anemia with liver, the tongue becomes normal again, as shown on the paper prints. These prints may be shellacked and thus make a permanent record for future study.—*International Medical Digest.*

HERNIA

REPORT OF AN INTERESTING CASE

By W. M. Junkin, M.D.

Elkins, W. Va.

Mr. E. H. M., a coal miner, age 47, was admitted to the Davis Memorial Hospital August 1, 1932, because of a left inguinal hernia. The hernia was first noticed by the patient two years before admission. He stated that just prior to the appearance of the hernia he had lifted a large lump of coal at which time he noticed a stinging pain in the groin. The next morning he became nauseated and vomited. He consulted his physician the same day who told him he was ruptured and advised him to wear a truss. He wore a truss most of the time but not consistently. The hernia came down a number of times but the patient was always able to reduce it himself. The past history and family history of this patient is essentially negative and there is no instance of hernia in his immediate family. Physical examination revealed a fairly well developed middle-aged white male. The chest is negative except for a few dry râles in the base of the left lung. The circulatory system is negative and the blood pressure is 100 systolic and 75 diastolic. Examination for hernia gives the impression of a small left indirect inguinial hernia which is reducable. About an inch below the hernia there is a small soft lump about two inches through its longest diameter. The mass is fixed, does not transmit an impulse on coughing, and is assumed to be a lipoma.

On August 6th the patient was given spinal anesthesia preceded by morphine grains one-fourth and scopolarium grains 150th. The usual skin incision was made parallel to Pupart's ligament. On exposure an indirect inguinal hernia of the acquired type was found. The sac was empty and measured about an inch and a half in diameter. This was repaired but before closing the skin the skin and superficial fascia was dissected down

in order to expose the "lipoma." A dense glistening capsule about one and one-half inches in diameter was encountered which when opened proved to be the sac of another hernia. In the sac was densely adherent omentum. This was dissected free, the unhealthy portion of omentum removed, and this hernia also repaired. The skin was then closed. It was apparent that two hernias had existed on the same side, one an indirect inguinal hernia, and the other an incarcerated femoral hernia.

COMMUNICATION

MR. GEORGE C. ROWELL,
Executive Secretary,

W. Va. Tuberculosis and Health Association.

I sincerely trust that the Board of Public Works will see fit to continue our clinic service appropriations during the next biennium. This is vitally necessary to the further control of tuberculosis in West Virginia. During the past few years as a result of the extensive efforts of the various anti-tuberculosis and public health agencies, we have had a *frank* drop in the tuberculosis mortality rate within our state. Any let up in our program at this time must be disastrous. Poverty, hunger, malnutrition, insanitary and crowded housing are all prolific breeders of tuberculosis, so while such forces are rampant it is extremely necessary that we be extremely vigilant in our efforts to cope with this disease.

During the past fiscal year, under our clinic program, I have examined 1,250 individuals in the clinics throughout the state. Many new cases of tuberculosis have been discovered; some are now cured and back to work again. Some old sanitarium patients have been caught while slipping into advanced disease and have been placed on the road to recovery. My work comprises but a small part of your state-wide program, but the patients whom I have diagnosed myself and placed on the road to recovery justified the expenditure if human life can be estimated in dollars and cents. A recent clinic in Pocahontas showed up an early active lesion in a high school girl. This girl was without symptoms. She was examined in a routine schedule; she is now in the sanitarium and will soon be returned to her home cured. Had this child not been discovered at this time by this clinic, she would probably have gone into advanced disease before discovery. I can recall many such incidents throughout the state.

The function of the clinic is the early diagnosis of tuberculosis. The question might be asked, Does early diagnosis matter to the state? Let me answer it from the statistics of the Hopemont Sanitarium—fifty per cent of our early cases became apparently cured after an average stay of 151 days. In advanced stages, only eight per cent attain anything even resembling cure and they remain not less than 861 days. A clinic is an expensive undertaking. It requires not only the service of a doctor, but weeks of preparation on the part of a trained public nurse. It is not enough to advertise a clinic. It is essential that the proper material come to the clinic, and it is also imperative that the fruits of the clinic be not lost. The nurse must see that all diagnosed cases are placed under proper supervision and treatment. Diagnosis is not sufficient, treatment must naturally follow.

The watchword of modern medicine is public health or prevention of disease. In tuberculosis we have at hand a proven method of prevention. We have a tuberculin test which shows to us all those who are infected with the causative agent of tuberculosis. If all school children were tested annually and the reactors placed upon a proper health régime, tuberculosis would soon cease to be a major health problem. It has been well said: "It is to the nursery and the school room that observation and effort must be directed if measures for the eradication of tuberculosis are to be fundamentally sound and practically effective."

West Virginia has under way a fine program of tuberculosis prevention, treatment and rehabilitation, and the bulwark of this entire scheme is the clinic. Remove the clinic and your whole control of this disease is thrown into confusion. We are progressing rapidly in this state but let us not become satisfied or contented. Only continuous and persistent effort can eradicate this disease.

Very sincerely yours,

HOPEMONT SANITARIUM,
GEORGE F. EVANS, M.D.,
Superintendent.

TWELVE POINTS IN THE PRINCIPLES AND POLICIES OF MEDICINE

PRINCIPLES

1. Medicine is the trustee of society in the care of the sick and injured; its policies must always be governed by this fundamental fact.

2. The good of society must be the sole aim of its public policies and the good of the patient the first consideration in the relations between physicians and patients.

3. Medicine's first responsibility must be to see that its services are available to all men.

4. The public interest demands the most competent medical profession possible. Medicine must be an attractive profession to compete successfully with other professions for the ablest young men.

5. In the sense that every calling from which a living must be gained is a business, medicine is a business; it must accept the competitive conditions of practical life but, as a profession of high ideals, it must seek to prevent selfish commercialism.

6. Experience has shown that the vast majority of disease conditions afflicting man can be most satisfactorily and economically diagnosed and treated by a competent individual general practitioner.

RESPONSIBILITIES

7. The services of medicine include (a) the practice of medicine; (b) the promotion of preventive medicine and the public health; (c) the fostering of research and the increase of knowledge.

8. Medicine's chief concern must be for the individual physician; the service rendered by individual physicians in the aggregate constitutes the great bulk of medical service. The quality of service which is given depends on the competency of the individual physicians who give it.

RIGHTS

9. The medical profession asks for its practitioners: freedom of opportunity to develop to the limit of their individual capacities.

10. It asks a career of independence under conditions of free and dignified competition.

11. It asks remuneration sufficient for reasonable comfort for the individual and for his family.

12. In its ideals of independence, medicine has a right to control its own affairs. Its history of capacity and altruism justifies this claim.

BOOK REVIEW

CLINICAL GYNECOLOGY

CLINICAL GYNECOLOGY, by C. Jeff Miller, M.D. The author's intention in writing this book was to furnish medical students with principles of therapy in gynecologic disease. Only so much of symptoms is mentioned as is involved in rational therapy. While no claim is made for originality of material, the author is very frank in giving the opinion of others and stating which of several elective measures he has found best. The fact that Dr. Miller is Professor of Gynecology at Tulane University, the Chief of the Department of Gynecology of Touro and has had very wide experience, makes this feature of the book especially valuable. The book is very much up to date, and has portions devoted to Theelin, Prolan, Protein Therapy, Electro-surgery, Elliott Treatment of Pelvic Infections and Trichomonas Vaginalis. The section devoted to menstrual disorders and that to endocrine therapy are especially illuminating to one who has read with bewilderment the many recent articles on sex hormones. The book is divided into three sections; the first, Gynecologic Diseases and Their Treatment; the second, Therapeutic Measures and Gynecologic Diseases; the third, Operative Gynecology. Office treatment receives adequate mention. As is usual with Mosby books, this is a well prepared volume. The type is clear with a reasonable use of sub-heads. The illustrations are clear and almost self-explanatory, and are so placed that the reader has but to glance from the text to the illustrations. This reviewer has read this book from cover to cover and recommends it as a good book, not only for the medical student but for the practitioner who treats gynecologic patients.—G.G.I.

REGULAR RETIRING HABITS

A few good rules in regard to the child's sleeping habits are formulated by Sophia Yarnall, whose experiences with her own and other children prompted her to write an article on sleeping which appears in the December *Hygeia*. She recommends:

1. A definite schedule and routine.

2. Little excitement after the evening meal.

3. A quiet house for fifteen minutes after the children retire.

4. No play after the children go to bed.

GENERAL NEWS

DR. MacGREGOR-DR. HOGE

January 1 will mark the end of the eventful and successful administration of Dr. Albert H. Hoge and the beginning of Dr. D. A. MacGregor's term as President of the West Virginia State Medical Association. To Dr. Hoge the JOURNAL extends heartiest congratulations for his courageous leadership during the past year. To Dr. MacGregor we extend our greetings and best wishes for a prosperous and successful term of office.

Perhaps the most outstanding accomplishment of Dr. Hoge's administration was his successful campaign for state-wide recognition of the Association by the public-at-large. Dr. Hoge guided the destiny of the Association with an experienced hand. The

DR. ALBERT H. HOGE

membership of the Association more than held its own during his term of office. The JOURNAL set aside a comfortable surplus. The cost of conducting the business affairs of the Association was materially reduced. The Association has prospered in every department under Dr. Hoge and he leaves it in a healthy and thriving condition.

Dr. MacGregor is well equipped to handle the problems of organized medicine in West Virginia. He has served the Association as its secretary and he is familiar with all of the administrative details. In addition Dr. MacGregor has had a wide experience on various important Association committees. Since his election last May, Dr. MacGregor has made a special study of our state problems, particularly those dealing with industrial and contract

DR. D. A. MacGREGOR

practice. His administration promises to be one of unusual success and accomplishment.

CENTRAL TRI-STATE

The next meeting of the Central Tri-State Medical Society will be held at the Hotel Pritchard, Huntington, on the afternoon of January 9, 1933. An excellent program has been arranged and a good attendance of members is anticipated. The program, which will start promptly at 2 o'clock P. M., follows:

Dr. Udo J. Wile, Professor of Dermatology and Syphilology at the University of Michigan, will give a paper on "Occult Syphilis: a Neglected Factor in Diagnosis and Treatment."

Dr. Curtis Durnam of Baltimore will give a paper on "Treatment of Carcinoma of the Cervix."

Dr. Ralph Pemberton, assistant Professor of Medicine at the University of Pennsylvania, will give a paper on "Arthritis."

Plans are now being made for two of the essayists to conduct a clinic at one of the Huntington hospitals on the morning of the program. Further announcement of this clinic will be made when the programs are mailed out to members.

GOITER RESEARCH AWARD

The American Association for the Study of Goiter, for the fourth time, offers three hundred dollars as a first award, and two honorable mentions for the best three essays based upon original research work on any phase of goiter presented at their annual meeting in Memphis, Tennessee, May 15, 16, and 17, 1933. It is hoped this will stimulate valuable research work, especially in regard to the basic cause of goiter.

Competing manuscripts must be in English and submitted to the Corresponding Secretary, J. R. Yung, M.D., 670 Cherry Street, Terre Haute, Indiana, not later than April 1, 1933. Manuscripts arriving after this date will be held for the next year or returned at the author's request.

MEDICAL COLLEGE OF VIRGINIA

Dr. Edward H. Cary, President of the American Medical Association, spoke to the student body of the Medical College of Virginia on a recent visit to Richmond. He was one of the principal speakers in the dedication of the new home and library of the Richmond Academy of Medicine.

Dr. Arthur P. Little has been appointed to the professorship of prosthetic dentistry in the school of dentistry, Medical College of Virginia, Richmond. For a number of years he was engaged in important research in his field of specialization.

Dr. Ray Lyman Wilbur, Secretary of the Interior, was the Founders' Day speaker at the Medical College of Virginia, Richmond, on Thursday, December 1. This was also the occasion for formally opening to the public the new library of the college.

WOMAN'S AUXILIARY

SUCCEEDS TO PRESIDENCY

In accordance with our National Constitution, Mrs. Freeman is succeeded in the office of President by Mrs. James F. Percy of Los Angeles, California. Mrs. Percy sends this message to all Auxiliaries concerning our future:

"In the great round of life with its swift changes, it is for us to muster courage, wisdom and a timely going forward that the momentum of our splendid organization may not stop. With a heroic array of constructive plans to have been presented by our late beloved President to the National Board Members on November 19, we are now at the place where we must mark time for a few weeks until the activities of the past few months will have been arranged in their proper place and your officers have a clear picture of our proper status.

"We feel that a special responsibility may be asked of the state presidents and their state and county officers in order to integrate the work of the old and the beginning of the new. We are asking and hoping that the state presidents with their officers will assist in this in order that the work may be helpfully done all over the country.

"If you do not hear from the standing committees during the interim of a few weeks, you will know that something beneficial to our future stability and usefulness is being worked out. Any Auxiliaries who succeed in speeding up, adding to or stimulating their activities, both actual and possible, will be considered by the national officers, as inhabitants of the 'Isle of the Blest'."

CHARLESTON ELECTS OFFICERS

At the regular November meeting of the Charleston Auxiliary Mrs. O. L. Aultz was elected to succeed Mrs. C. E. Copeland who is now completing a most successful year as President. Charleston now has a membership of 62 paid-up members with an attendance of 40 to 50 at each meeting. They have adopted the policy of doing the task nearest at hand and have a most interesting report for the past year's work, part of which was reported in the last issue of the Journal.

MARION COUNTY DINNER

Marion County Auxiliary held a dinner meeting at the home of Mrs. George Traugh, the President. Each guest paid fifty cents for her dinner and the

proceeds were donated to the Welfare Society for relief work. This has been the custom of Marion Auxiliary for some time and the donations for charity have been much appreciated.

MONONGALIA BRIDGE PARTIES

The members of Monongalia Auxiliary raised a total of $38.50 at a series of benefit bridge parties held in the homes of members. They gave a prize last month to the Woodburn school for having the highest percentage of physical corrections, the prize being a two-year subscription to *Hygeia*.

NEW OFFICERS FOR HARRISON

Officers elected at the November meeting of the Harrison County Auxiliary were: President, Mrs. H. H. Haynes; Vice-President, Mrs. R. V. Lynch; Secretary-Treasurer, Mrs. W. W. Spelsburg; Corresponding Secretary, Mrs. Russel Coffindaffer.

Mrs. Charles L. Parks, State Public Relations Chairman, is much improved and able to resume work again after an illness of several weeks. Mrs. Parks was injured in a fall and her many friends will rejoice at the news of her recovery.

Born to Dr. and Mrs. Harry V. Thomas, Fairmont, on November 7, 1932, a son, William Gould.

Died, Mrs. J. R. Shultz, Charleston.

CHILDREN'S PLAYTHINGS

A plaything should appeal to the child's initiative. It should not be so complete that it leaves the child little to do or so complicated that it does not answer the need of undeveloped minds and bodies.

A few enterprising leaders are making toys which answer scientifically the physical and mental needs of children of nursery age and older. The toys are intended to do more than amuse. They stimulate imagination, hold attention and develop muscular poise and control.

Rose Henderson, author of "Playthings and Health," which appears in the December *Hygeia*, gives for example the manipulative toys. These are the ones a child can handle, take part, put together, pile up, knock down, arrange and construct. They satisfy his curiosity as to the size and shape of objects; they aid in developing muscular coördination through his handling of the toys.

MONTHLY MORBIDITY REPORT

for NOVEMBER, 1932

	Scarlet Fever	Chickenpox	Diphtheria	Tuberculosis (All Forms)	Typhoid Fever	Poliomyelitis	Whooping Cough	Influenza
Barbour	4	....	....	....	1	....	....	....
Berkeley	2	....	....	....	....	....	11	....
Boone	....	....	5	....	....	1	....	....
Braxton	....	....	4	....	3	....	....	2
Brooke	13	2	....	....	2	....	1	....
Cabell	37	3	20	....	....	....	....	....
Calhoun	....	....	4	....	2	....	....	....
Doddridge	10	12	4	6	9	....	6	28
Fayette	6	16	4	....	8	....	4	29
Gilmer	10	....	9	....	1	....	....	....
Greenbrier	1	....	2	....	....	....	....	....
Hampshire	1	3	....	....	....	....	....	....
Hancock	2	....	3	2	....	....	....	....
Hardy	1	....	....	....	....	....	....	....
Harrison	18	22	6	....	....	....	3	....
Jefferson	....	1	1	1	....	....	....	2
Kanawha	11	14	22	3	11	1	10	12
Lewis	1	3	1	....	....	....	....	....
Lincoln	1	....	1	....	1	....	....	3
Logan	7	2	4	....	....	....	....	....
Marion	23	12	4	5	2	....	7	....
Marshall	4	7	....	....	....	....	1	....
Mason	9	....	....	....	3	....	3	2
Mercer	5	18	7	....	2	....	....	....
Mineral	22	4	1	3	....	....	6	18
Mingo	5	....	2	....	3	....	4	....
Monongalia	18	11	14	....	....	....	1	....
Monroe	....	....	....	....	3	....	....	....
Morgan	1	10	....	....	2	....	....	....
Nicholas	....	....	8	....	1	....	....	....
Ohio	20	102	....	8	2	....	15	....
Pleasants	2	....	....	....	....	....	....	....
Preston	13	4	....	....	....	....	....	....
Putnam	....	1	3	....	5	....	....	....
Raleigh	11	....	20	1	....	....	3	....
Randolph	6	....	4	....	....	....	....	....
Ritchie	....	....	....	....	....	....	....	2
Roane	3	....	3	....	....	....	....	5
Summers	3	....	1	....	....	....	....	....
Tucker	1	....	1	....	....	....	....	....
Upshur	2	....	4	....	....	....	....	....
Wayne	6	....	7	....	2	....	5	....
Wirt	2	....	....	....	....	....	....	....
Wood	2	6	8	2	....	....	1	....
Wyoming	2	5	2	1	....	....	....	14
Totals	285	258	179	32	63	2	81	117

TREATMENT OF GRANULOMA INGUINALE

H. H. Hazen, William J. Howard, C. Wendell Freeman and Ralph H. Schull, Washington, D. C., state that granuloma inguinale is of common occurrence among the negroes of Washington. While irradiation is reasonably effective, the most certain results are obtained by a freshly prepared solution of antimony and potassium tartrate or injections of ampules of antimony thioglycollamide.—*Journal A.M.A.*

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OF THE

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(Editor's Note—Below will be found the names of all active and honorary members in good standing in their respective county societies. The asterisk (*) appearing before a name indicates honorary membership. From this type will be published the annual Association directory of members. Will each member please check his own name and address and notify the JOURNAL at once if any error has been made.)

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NEPHRITIS, NEPHROSIS, AND EDEMA *

By F. CHURCHILL HODGES, M.D.
Huntington, W. Va.

WE as physicians are especially interested in cardio-vascular-renal disease, inasmuch as the large majority of deaths among us is due to this triad, either in whole or in part. Many recent and interesting studies have been made along these lines, but here we shall discuss only the renal lesions.

Finding a satisfactory title has been a difficult and unsatisfactory task, but for purposes of discussion we shall call it "Nephritis, Nephrosis, and Edema," taking the three because of their close relation and frequent association.

Nephritis is a term which indicates an inflammation of the kidney, which brings us face to face with the embarrassing and disputed question, "What is inflammation?" This will be answered by stating the view which is probably the most widely accepted: that inflammation refers to those exudative and proliferative processes which are observed in the vascular and fixed tissue elements of a tissue which follow as a reaction to some irritative stimulus. We have all seen sections of kidneys on which the diagnosis of nephritis had been made, but in which we could find none of the usually accepted criteria of inflammation; no congestion, no swelling, no infiltration with round or polynuclear cells; perhaps there was only a cloudy swelling, or a fibrosis with contraction. For want of a better term we call it nephritis. We applied a definite and specific term to an indefinite and non-specific entity, and in order to make it fit our cases, certain mental reservations must be made. To be sure, we have other terms requiring mental reservations; diabetes mellitus, for instance, in which there is no suggestion of the sclerosis of the Isles of Langerhans or of pancreatic deficiency. It has been suggested by Addis[1] that we revive the old term, "Bright's Disease," to apply to those non-suppurative, non-calculous, non-neoplastic kidney diseases which we at present call nephritis. It has the advantage that the kidney lesions are not unduly emphasized, that it is rather non-committal, and allows us freely to make mental reservations and properly place the kidney in relation to the disease as a systemic involvement, and withal conveys in a general way what we mean.

Bright's disease, which includes nephritis and nephrosis as ordinarily termed, is a general disease in which many organs and tissues are involved to a greater or less degree; but because of the impossibility of discussing all the lesions in such a limited time, only the

* Read before general session, West Virginia State Medical Association, Parkersburg, June 21, 1932.

renal aspects are here considered. The heart, liver, pancreas, and nerve tissues may all be involved, but because of the lack of or the difficulty in obtaining secretions or excretions, the kidneys are the most readily studied because of the east with which the urine may be obtained.

Numerous classifications of nephritis have been made, which in itself is sufficient evidence that none is perfectly satisfactory. As stated by Christian, it is now impossible in many cases to foretell what we shall find in the kidneys at post-mortem; whether more or less nephritis, or less or more nephrosis.[2] His classification has the advantage of being simple and practical.

The classification of nephritis (Dr. Henry A. Christian):

Acute Nephritis.—The majority recover completely. A few die in the acute stage. Few are liable to develop chronic nephritis.

Sub-acute Nephritis—

1. Sub-acute nephritis with edema.
2. Hemorrhagic nephritis.

Chronic Nephritis—

1. Chronic nephritis with edema. Hypertension rare. (Distinguish the cardiac type.)
2. Chronic nephritis without edema. (The usual type.)
3. Vascular hypertension progressing into nephritis. (No history of acute nephritis. Is part of a general disease, mostly vascular.)

The classification of Addis and Oliver was based on the careful study of 72 patients, who were studied clinically and at the post-mortem by the authors. They have developed a method which attempts to correlate the clinical with the post-mortem findings. The most reliable single means has been found to be a careful study of the formed elements in the urinary sediment. The normal varies from the abnormal in degree only, and as normals they take the following, for each twelve-hour period:

Casts, less than 5,000.

Red blood cells, less than half a million.

White blood and epithelial cells, which they enumerate together, less than one million.

Protein, less than 30 mgm.

In the hemorrhagic types of Bright's disease they found the red blood cells to predominate over the white and epithelial cells; and in the degenerative forms, they found the reverse to be true. This requires a careful quantitative determination of the different elements of the urine by means of the method described by Addis; but after some experience, simply a careful microscopic examination of a centrifuged specimen under high power is sufficient for clinical purposes.[3]

In Addis's study, the duration of Bright's disease varied enormously, from a few weeks on the one hand to more than fifty years on the other. Many died of some concomitant disease, the deaths not being attributed directly to the renal lesion, although in many instances these lesions so lowered the resistance that infection easily gained the upper hand. One is impressed with the large number affected with a latent renal lesion which had been fanned into an active one by some apparently trivial infection, such as a streptococcic sore throat or a pyogenic finger infection; the renal lesion then progressing to a fatal termination.

A classification of Bright's Disease (Addis and Oliver):

Hemorrhagic Bright's Disease—

1. Active stage.
2. Latent stage.
3. Terminal stage.

Degenerative Bright's Disease—

1. Cryptic form (Nephrosis).
2. Pyogenic form.
3. Bacterial form.
4. Non-bacterial form.

Arteriosclerotic Bright's Disease.

A great deal of investigation has been done, and much yet remains undone, on the functional capacity of the kidneys. What is the effect of injury on the renal epithelium; how much injury can it withstand and yet completely recover, and from what types of injury can it or can it not recover? In case of replacement of the tubular epithelium, how does the new lining compare in function with the original? Just how far can we correlate

structure and function? We know that an irritant producing a cloudy swelling damages the renal epithelium, yet that same epithelium may present a state of hyperactivity and hyperfunction. Of course, if this irritant be continued to a degree sufficient to produce necrosis, it is plain that function must cease. In general terms the functional capacity of the kidney runs parallel to the amount of undamaged renal tissue; but to determine this amount, even in the excised kidney, is in many cases difficult. There may be areas of patchy fibrosis in which the normal architecture is completely destroyed, adjoining which there may be areas of compensatory hypertrophy; or there may be a metaplasia of some of the tubular epithelium. How can we accurately determine the amount of function by the structure when the relation between the two is not accurately known?

Many functional tests have been devised, among the most valuable of which are:

1. The phenolsulphonephthalein test.
2. The retention of nitrogenous products in the blood, such as urea, non-protein nitrogen, and creatinin.
3. The ingestion of large amounts of fluid.
4. Abstinence from fluid.
5. The administration of urea, with the determination of the amount excreted and the amount retained.
6. Test diets with the determination of the amounts and the specific gravity of the urine. (Lashmet and Newburgh.)
7. The Mosenthal test.

In the first two, more than 40% of the renal function is lost before abnormalities are shown; but after this they are among the most valuable. The kidney function can no more be accurately measured with the kidneys idling with only the basal catabolic load than can the horsepower of a motor be determined while it is idling. Both must be pushed to or near their maximal capacities in order to make these determinations. This explains why a patient at rest in bed on a general diet, may possibly have a severe renal lesion with a normal blood nitrogen and a normal phenolsulphonephthalein test; yet when he is subjected to an operation, or develops an apparently trivial infection, the remaining renal tissue becomes easily damaged to a degree sufficient to cause renal failure. In other words, it is unable to take care of any increased demands made upon it.

The administration of urea as practiced by Addis; the test diets of Lashmet and Newburgh[4] with the determination of the specific gravity of the urine; and the Mosenthal test all place the kidneys under a heavy working load, and are thus capable of determining a relatively small reduction in function.

The Mosenthal test is one of the best and most practical of these, and for that reason is given in some detail.

The Test.—1. Upon the day of the test, and preferably also on the day preceding, place the patient on a full diet. Breakfast at 8 A. M., dinner at noon, and supper at 5 P. M.

At least a pint of fluid—tea, coffee, milk, water, etc.—must be taken at each meal, and no food or liquid of any sort may be taken outside of these meals until after 8 o'clock the following morning.

2. Instruct patient to empty his bladder immediately before breakfast. Collect specimens of urine at 10 A. M., 12 noon, 2 P. M., 4 P. M., 6 P. M., 8 P. M., and finally at 8 the following morning. It is essential that the intervals be exact, and the bladder be emptied each time. Should the hour for the meals be changed, the times of collecting the specimens should also be changed. The last of the two-hour specimens must not be collected less than three hours after the beginning of the evening meal.

3. Measure the night urine (8 P. M. to 8 A. M.) and take its specific gravity with an accurate urinometer.

4. Measure the six two-hour specimens and take their specific gravity, making sure that they are all of the same temperature.

Normal Values.—In health the urine response is as follows:

1. The night urine is much less than the day urine. It is usually 250 to 300 cc., and will seldom exceed 400 to 500 cc.; 750 cc. is the maximum. Its specific gravity will be usually 1.108 or above.

2. The highest specific gravity for the two-hour specimens will exceed 1.018, while the difference between the highest and the lowest will not be less than eight or nine points.

Indications of Impaired Renal Function.— 1. Nocturnal polyuria. The volume exceeds 750 cc. This is usually one of the first and most definite evidences of impaired renal function. A volume of 500 to 750 cc. is suspicious.

2. Low maximal specific gravity of the day urine, the highest of the day specimens falling below 1.018.

3. Fixation of the specific gravity. As a rule the level at which the specific gravity becomes fixed becomes lower and lower as the functional impairment increases and the kidneys lost their ability to concentrate the urine.

The exact origin of the urinary protein has not been thoroughly explained. Recently Thomas[6] has advanced the idea that normal protein does not pass the epithelium of either the normal or the diseased kidney, and that the blood protein appearing in the urine is a detoxifying agent, being combined with some toxic molecule. Among the proofs he cites experiments showing that uremia produced by hypertonic NaCl, and in the ether nephritides of humans, liver proteins free from blood proteins are first eliminated in the urine, but that blood protein soon begins to appear and rapidly increases in amount. Organic protein in the urine must be regarded as foreign protein. He emphasizes the view that the kidneys are by no means the only organs affected in nephritis; that it is a general disease with local manifestations; and that the kidneys bear a secondary rôle to the tissues.

Nephrosis, or the degenerative cryptic Bright's disease of Addis, is a term designating a group of cases in which there is a profound metabolic disturbance. The term nephrosis is inappropriate because it accords to the kidney an undue importance in the evolution of the condition which it represents, and fails to coördinate the renal and the extra-renal lesions. The renal lesions have certain distinguishing features, consisting of a profound tubular degeneration with no involvement of the glomeruli, blood vessels, or interstitial tissue.

Because of certain unusual features in the clinical course, they will be briefly discussed. It occurs in relatively young individuals; is of obscure origin, but is probably toxic, but does not bear any relation to the known infectious diseases. The blood pressure is not elevated. Subjective symptoms may be lacking, and often the exact time of onset can not be determined. As it progresses, oliguria and edema invariably develop. Pallor is usually pronounced, the skin being of a dirty gray or putty color, and together with puffiness of the eyelids or swelling of the ankles may be the first symptoms to attract the patient's attention. Loss of appetite and a feeling of fatigue may be among the earlier symptoms. Headache, vomiting and diarrhea may also be present. With the progress of the disease, edema becomes marked and here reaches its highest degree, forming the chief clinical manifestation. The heart is not enlarged, and in uncomplicated cases, the blood pressure is never increased.

The urine is reduced in quantity, of a high specific gravity, and contains large amounts of albumin, sometimes amounting to 50 grams per diem for months. There may or may not be casts, but red blood cells in more than normal numbers are never present. If in doubt as to their presence, apply the benzidine test to the sediment of a centrifuged specimen. Functional tests show some renal deficiency, such as retention of chlorides, of nitrogen, and a diminished dye test.

There may be a marked chloride retention which may or may not show in the blood, due to the deposit of large amounts of chloride bearing fluid in the tissues. The same may be the case with nitrogenous products, a

marked retention may occur without an elevated blood nitrogen. Hence the measurement of soluble substances in the blood in all cases associated with massive effusions or edema, does not accurately measure the quantity of such substances which are retained in the body.

Apart from these changes there occurs in the blood an increased lipoid content, chiefly cholesterol; which is of a different order from that of diabetes mellitus. In nephrosis it is probably due to tissue degeneration, and is uninfluenced by the restriction of fat in the diet; while in diabetes it is due to a perverted utilization of fats.

Normally the blood contains from 6% to 8% protein, of which globulin forms about 37% and the albumin 63%. In nephrosis the protein is reduced to an average of 4%, while there is a reversal of the albumin-globulin forms 63% and the albumin 37% of the total protein.[7]

The reduction of the protein is of twofold importance. First, it stands in causal relationship to the edema, and second, it furnishes an intimation of the effect of albuminuria on the nutrition of the body, thus pointing to a rational therapeutic measure.

Renal diseases usually do not pursue a typical and clear-cut course. Cases of glomerulo-nephritis to which the pathologic picture of nephrosis is added, and vice versa, occur. However, an increase in the blood pressure, a marked nitrogen relation, and the presence of blood in the urine point to the glomerulo-nephritic element. An increase in the cholesterol, reduction of the serum protein, a change in the albumin-globulin ratio, and the absence of red blood cells point to the nephrotic element.

Bell has recently shown that in nephrosis the glomerular capsule is thickened, but at the same time is more spongy and porous than normal, allowing protein to pass readily. In nephritis the glomerular capillaries are stopped up tightly with swollen endothelial cells and red blood cells, while in nephrosis they are open. He states that the only place where albumin escapes is through the glomeruli. (To demonstrate the thickened glomerular capsule in nephrosis, he employs an azo-carmine stain.)

Edema.—Edema is the escape of fluid from the blood into the tissue spaces. The fluid is not always of the same character, but may vary according to the causative factor.

Lashmet[9] has recently made observations which lead him to believe that edema is not due to the failure of the kidneys to excrete water, and is independent of fluid intake. Neither is it due to the failure of the kidneys to excrete chloride. Chloride as NaCl increases edema, but as HCl or NH_4Cl it decreases it. Apparently the reaction of the compound is more important than the chloride content as such. The reaction of the total ash intake of the food is more important in influencing edema than the total amount of ash. An alkaline ash increases edema, while an acid ash decreases it. The cardiac, the nephritic, and the nephrotic types of edema can be distinguished by their protein content.

Cardiac edema is caused by a stasis with enormously increased capillary pressure, resulting in increased filtration with an increase in the transudate, not varying a great deal in its concentration from that of the blood plasma; about 4%. It occurs especially in the dependent portions of the body where the pressure is greatest.

The edema of hemorrhagic Bright's disease is due to causes which are not quite so clear; among which are increased capillary pressure, increased capillary permeability due to toxins, an abnormal distribution of salts and acids, and a lowering of blood protein. The edema fluid is here more than 0.2% but less than 1% protein.

The edema of nephrosis is also due to a disturbance in the balance between the capillary pressure and the osmotic force of the blood. The blood protein, according to Starling, furnishes an esmotic pressure of about 30 mm. Hg, consequently the great loss of protein causes a marked fall in the osmotic pressure of the blood, which not only favors the passage of fluid from the blood to the tissues, but also gives to the tissues the

controlling power to absorb and retain fluid. The edema fluid is very poor in protein, about like the cerebro-spinal fluid, containing about 0.1% protein.

The experiment of plasmaphoresis[9] shows to what degree a lack of blood protein may cause edema. If large amounts of blood are withdrawn from a dog, the cells washed free from protein, then the cells injected into the animal, a marked lowering of the blood protein occurs. This is followed by the appearance of an edema which is proportional to the decrease in blood protein, and it can be relieved by feeding or injecting protein in sufficient amount.

Here it is interesting to note the ingenious and simple intradermal saline test devised by Aldrich and McClure,[10] It consists of the intradermal injection of 0.2% normal saline in the forearm, or the inner side of the calf or the outer side of the leg, and noting the disappearance time. Normally it is more than 60 minutes in the forearm, and more than 50 minutes in the leg, the forearm being the more reliable.

It is a valuable method for determining the immediate prognosis in nephritis with generalized edema, and shows changes earlier than by any other means. It also aids in directing therapeutic management. The results seem to substantiate the theory that the tissues in this type of case are active in the development of edema. The greater the edema the less the disappearance time, and in some instances it disappears immediately due to its admixture with the edema fluid. There is no constant relation between the disappearance time and albuminuria.

Summary.—1. Nephritis is a specific term indicating an inflammation of the kidney. Inasmuch as some renal lesions which are thus classified show no inflammation, the suggestion of Addis that we revive the term "Bright's Disease" to apply to these cases is discussed.

2. Addis found that the most constant changes in Bright's disease which could be approached from the clinical standpoint were to be found in the urinary sediment. He found that the hemorrhagic forms show a predominance of red cells over the white and epithelial cells; while in the degenerative forms, the white and epithelial cells predominate over the red ones.

3. More than 40% renal function is lost before the nitrogenous elements in the blood are increased. The test diet of Mosenthal is found to be very satisfactory and practical, and shows earlier changes than the blood chemistry. In the late stages, the blood nitrogen retention is the more imporant.

4. The importance of feeding the proper amount of protein in Bright's disease is emphasized. The catabolic protein products should be limited to the capacity of the kidneys to excrete them, but at the same time the anabolic needs should be satisfied, as well as the replacement of the proteins lost in the urine. Too great restriction of proteins often causes anemia, weakness, and other concomitant symptoms without benefitting the Bright's disease or lowering the blood pressure.

5. The term nephrosis has been discussed, how it differs from nephritis, and the clinical features briefly given. Blood cells in the urine in more than normal amounts rule out nephrosis, and add the glomerular element.

6. The importance of the reaction of the ash of the food in the production of edema is shown; that an alkaline ash increases, and an acid ash decreases it. The edema fluids in cardiac, nephritic, and nephrotic patients can be differentiated by their protein content.

7. The blood protein as an important element in maintaining the osmotic pressure of the blood. A marked loss of blood protein results in the development of edema.

8. The disappearance time of intradermally injected normal salt solution is a valuable aid in the prognosis and in the therapeutic management of nephritis with edema.

9. A classification of Bright's disease according to Addis and Oliver, in which they correlate the clinical with the post-mortem findings, is given, and the pathology of each type briefly discussed.

Discussion

LUTHER C. DAVIS, M.D., Fairmont: It seems to me that our knowledge of nephritis is growing slowly as the knowledge of biochemistry increases. I have heard a little discussion of arterio sclerotic nephritis. But, of course, in dealing with arterio sclerotis, it is about the same proposition as dealing with a machine. The question of a cure is out of the question. Here we have to deal with teaching a machine to run. If we have an automobile with the bearings knocking, actually, that automobile will not stand the high pace of speed a newly equipped car could. So we try to teach these people with arterio sclerotic nephritis to slow up just the same as we teach our car to slow up. When we say slow up from the standpoint of nephritis, it simply means slowing up from the standpoint of exercise and energy we put out, from the standpoint of the type of diet.

A great deal can be done toward curing these patients, who are usually well up in years. Sometimes treatment by a skillful physician is well worth while. To frighten them, I think, is worse than anything else. We try to watch them; we try to supervise them, without laying too much emphasis upon the findings of our laboratory work. I think the most pitiful thing in the world is to see an arterio scalrotic patient come into a doctor's office. In your examination, if the blood pressure is down five points, he is perfectly happy; if it is up five points, he is terribly discouraged. That is the problem that you see every day every place.

In regard to the question of edema, you can pick up almost any medical magazine and find a discussion in some way or in some manner related to edema.

Dr. Hodges pointed out the manner of treating children for nephrosis by the administration of calcium agglutinate; another by the use of acid, being placed on a diet with a nutritional acid so that they have an excess of chloride acids, and, according to the present reports in the papers, one method will work almost as good as another. We all remember the old treatment of withholding chlorides especially sodium chloride, and now we realize that it is not chloride that is responsible for this edema.

I think that in our treatment it is wise not to be too radical, to insist a great deal upon diet and to insist a great deal upon kidney rest, meaning, of course, slowing down the manner and the metabolism of the individual.

WALTER C. SWANN, M.D., Huntington: Dr. Hodge's paper is an excellent résumé of recent work in kidney diseases. He has explained to us the difference in nephritis, nephrosis, and edema.

Protein is important, even in the early stages. When protein is lowered in the blood serum you get an extensive edema. You can not expect to cure an edema unless you replace this by frequent blood transfusions or a rather large amount of feeding of proteins.

In many neurotic patients you find two grams of protein and two and one-half grams of carbohydrates. I think this is the type of case where it is important to be careful with proteins. Dr. Hodges has plainly shown that in nephrosis, when there is a protein loss in the blood, you can not expect to cure the edema unless you replace the protein in the blood.

Dr. Hodges asked me to discuss nephrosis rather than nephritis. A good many observers have noted that the metabolic rate is low in nephrosis. Many theorists believe that some therapy is indicated in nephrosis and many of them get good results. I think it might be well to call attention to the fact that nephrosis, as described by Dr. Hodges, is to be expected following tuberculosis, syphilis, and insufflations of measles. In some cases you can not find out from your urine blood serum determinations and blood chemistry determinations.

The best dietary treatment, as Dr. Hodges pointed out, is probably the higher protein diet. If that does not control it, then you will probably have frequent blood transfusions in the control of edema.

DR. HODGES (closing the discussion): We have seen patients with hypertensive Bright's disease showing much albumin, on which account the proteins had been markedly restricted or entirely interdicted during a period of several years, but in spite of which there had been either no reduction in the blood pressure, or there had been a gradual rise. Not only this, but the depletion of the body proteins had resulted in a nutritional anemia, weakness, and other concomitant symptoms.

I have repeatedly seen both a subjective and an objective improvement in such patients when placed on a balanced diet in which a full amount of animal protein such as roast beef, beefsteak, veal; and lamb were allowed. Such a régime did not in itself increase the blood pressure.

If the blood nitrogen is low, one need not hesitate to feed animal proteins, which are more easily digested and cause a greater improvement than those of vegetable origin.

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ESTIMATION OF PERMANENT DISABILITY IN INDUSTRIAL ACCIDENTS *

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THE determination of the basis for estimating compensation rests upon the fundamental concept of compensation as replacement rather than damages for reduced earning capacity that results from injuries sustained in the course of employment. Most compensation schedules do not contain any provision for the determination of just how this reduced earning capacity should be measured. They utilize, for most part, the extent of the bodily injury, as the indicator of reduced earning capacity. Theoretically, this is inaccurate. It is not the lesion that is to be indemnified, but it is the effects of that lesion on the ability of that man to work and earn money. The schedules of the laws of this country, and of foreign countries, therefore, represent only an approximation of the reduced earning capacity following certain types of injuries. This approximation is further modified by the fact that the schedules are, for the larger part, compromises between the forces of labor and the forces of capital, as to what should constitute a fair schedule of disabilities causing reduced earning capacity.

Theoretically, the proper thing to do would be to take, let us say, a thousand machinists between the ages of twenty-five and thirty, with the same lesion, an amputation of the hand, and study and observe them over a definite period of time—five years. After judging the income, or reduced earning capacity of these one thousand machinists, a fairly definite idea could be obtained of the economic effects of a hand amputation.

Obviously, such a practice would be impracticable, and, because such statistics do not exist anywhere, we must be satisfied with what we have—a compromise, plus an adaptation of the schedules of private insurance companies that have existed for a long period of time, and which have been taken over and modified to suit our own purposes.

Let me illustrate the inaccuracy and lack of uniformity in these laws and schedules which have been prepared for us by our legislators. We can begin with this lack of uniformity by showing that the same lesions in different states are given different weights or values. In Alabama, an arm that is amputated at the shoulder is worth two hundred weeks of compensation. In Hawaii it is worth three hundred twelve weeks of compensation; in New Mexico it is worth one hundred fifty weeks of compensation.

* Read before the Section on Surgery, West Virginia State Medical Association, at Parkersburg, on June 23, 1932.

Not only is there a gross lack of uniformity in the value for each lesion, but there is also a relative inaccuracy in the schedules. An arm or a hand is equivalent to 27% of the total industrial efficiency of a person in Alabama. In Hawaii a hand is given a 78% value, in terms of general industrial efficiency for the routine pursuits of life.

Furthermore, you will notice that only the extremities are included in the schedules of the law. There is nothing said about back injuries; nothing said about injuries to the genitourinary system, to the abdomen, and other vital organs. The schedules include only the extremities and a few so-called absolute incapacities, such as total paralysis, blindness or insanity. So the scope of these schedules is considerably impaired by the lack of provision for the wide variety of injuries that we see in our daily life. Still further, these schedules represent disabilities for complete loss of use of a part; for 100% loss of use of a hand in case of amputation. As a matter of fact, the laws say nothing about the loss of use; they imply loss of use when they say amputation or schedule loss. There is nothing in the law to help us to determine partial disabilities, those less than 100%. The responsibility for making that determination is left entirely to the medical profession without any clue, without any guidance, without any provision in the schedule, or the Workmen's Compensation Acts of the respective states. Upon the physician is imposed the task of translating into mathematical terms, into percentages, the industrial loss following a compound fracture of the arm with marked stiffness and deformity and possibly a paralysis, an amputation, a fractured spine with paralysis—all sorts of injuries less than completely disabling must be adequately and accurately estimated by the attending physician.

Now, I frequently hear the criticism that the physician who represents the employee is motivated; I do not believe it is the truth. I believe each physician is thinking of something when he makes a determination. One man may be thinking first of reduction of earning capacity; another may be thinking of the effect of that compound fracture on the loss of efficiency for a specific vocation. They may still further think in terms of structural loss of the part, and they may think of the deformity as a serious bar to employment. I know one boy who could not get a job anywhere because he had six fingers on one hand. Wherever he went he was told, "Young man, you can't work here; you have too many fingers." The digit was removed, and it was a simple matter to get employment. But a cosmetic defect is frequently a great bar to employment. That may be in the mind of the physician examining the case; and, finally, the physician may be thinking in terms of functional loss.

Now, these are the various criteria which come into our minds when we think of computing or estimating the disability caused by a specific accidental lesion.

Which of these criteria shall we choose? Shall we choose the reduction of earning capacity? At first glance, that would appear to be most simple. If a man earned $50 a week as a carpenter, and following his injury, he was only able to earn $25 a week, it will be a simple matter to compute that he had a 50% loss of earning capacity, and, therefore, he is entitled to 50% compensation. However, it would be very inequitable to follow such a practice, because a man with a slight finger injury might, because of reasons known to himself, refuse to go back to employment since he may rely upon payments from three or four large insurance companies and other sources which add to his compensation, and which would give him a total income far beyond his regular weekly wages. And that is a situation that I have met not infrequently. It would be unfair to the man who went back to his former job and struggled along as well as he could, making his $50 a week, but handicapped in a great many extra industrial activities because of this injury. Furthermore, the Federal Board of Vocational Education has recently issued a pamphlet in which they describe 6,000 cases of arm amputations, carrying on in every

known occupation. Here it would put a premium on idleness and laziness, and, for that reason, in addition to the reasons already given, we do not believe reduction of earning capacity to be a fair or accurate method of basis to use in determining disability.

Loss of efficiency for a specific vocation is urged by some. If a man can not continue at his former trade, it would seem that it should be given consideration, and possibly it is given consideration in most examinations. However, as previously mentioned, a man who loses a finger and is a jeweler might not be able to go back to his trade, but there are a great many other things he can do and physiologically he is no worse off than a longshoreman. The mere fact that a man has a fracture is not an indication in itself that he has a disability. Very frequently we see cases of severe deformity, with good function, and, vice versa, we see cases of well united fractures with good physical alignment, and with very disabling function, so that the two may be correlated, may be intimately related, but not mutually dependable.

Cosmetic effect should be given some consideration, but it is such a variable condition that it does not lend itself to measurement. Ability to secure employment again depends upon so many conditions over which we have no control, and concerning which we have very little information. For example, in a time like this, when the normal worker can not secure a position, the handicapped worker finds it even more difficult to secure employment.

Finally, it is my belief that functional loss, physiological loss, lends itself most readily to measurement, and to answering those interrogatories which were concerned in determining the disability in terms of reduced earning capacity.

Now, here again we must pause for another definition. By function, I may mean something else. Function in the extremities, for example, is not synonymous with motion at all; motion is only one component or one element that goes to make up the function of an extremity. The power of the muscles is also an important consideration. And, finally, coördination and control from the brain is an important factor. For a long time I was of the opinion that a right-handed man had more strength in his right hand than in the left, but a little study will convince you that the difference in the two is not in strength but in coördination. A right-handed man has more control over his right hand than over the left. We can take a right-handed man and teach him to write with his left hand in six weeks. That is only a matter of practice and control and education.

Now, these three elements go to make up the function of one part of the upper arm. You will find that your arm is composed of two units, the compound lever, represented by the bones and joints of the arm which permits the second unit, or hand, to gain access to objects. The function or usage of the hand unit is different from that of the arm radical or arm unit in that the hand is a tool and the arm is a compound lever.

Some of the ordinary types of apparatus that might be used in measuring these elementary components of function are goniometers, arthrometers, hinged protractors and compound protractors which help to determine the range of motion of the joints. By the use of this compound protractor, we can summate the motions in the individual joint and compare them to the joints of the respective finger on the other hand. For determining strength one may use an ordinary spring dynamometer. This is a very inefficient and inaccurate instrument. I have tested it out with a large number of cases and found such variations of readings that I have given it up entirely. For example, in two non-litigation cases, one was a man who was dying from amyloid changes as a result of tuberculosis, he gave me the highest rating; and the second was a man who was a truck driver, a large strong man, and who gave me the lowest rating. The readings depend so much upon voluntary control that they are ineffective in the laboratory. Because of this fact, we resort to the use of spring balances. This was devised by Martin and Lovett, and

is used in such cases. It was used in 1916 in a large series of infantile paralysis cases in Vermont, and found to be a very effective instrument in determining the strength of very weak muscles. It is a valuable instrument in that the voluntary control of the patient's muscles is minimized. The patient does not pull actively. He resists the pull of the operator as described in my next slide.

Here you see the nurse pulling on the arm (indicating slide) and the patient resisting the pull. Three or four readings are taken and the average is used as an index of the muscular strength of that group of muscles.

Next, Martin has recorded a series of relative strengths of the various muscle groups of the upper extremities, and you will find that an examination of your patient will conform very closely to those percentages. If they do not conform either the reading has not been done properly, or the patient has not been coöperative.

Now, I have shown you the measurement of motion, measurement of strength, and, third, as a factor for measurement is coördination. There are a great many tests that can be used; psychologists are responsible for a large number of tests such as these (indicating). The target test is a little simple one. Another one is the peg-hole test. The individual places a certain number of pegs in round holes in a specified time, and that is compared to the other hand.

The technique of estimation is as follows: An equal value is given to the three major joints of the arm, the shoulder, elbow and wrist. We have been arbitrary because we do not know which of the joints are of the greatest usefulness for the routine pursuits of life, even though we may know it for a specific vocation. We do not know it for all the various industrial pursuits, so we must start with an arbitrary principle of giving an equal value to each of the joints. These are the shoulder joint, the elbow joint, and the wrist joint. We give each a value of 33 1/3%. If a man has a fracture to the upper end of the humerus, and we determine that his arm will only come up 90 degrees instead of having a complete elevation of 180 degrees, he has a loss of 50% of one arc of movement—a loss of 50% of 33 1/3%; a loss of 17% of motion in that range. The external rotation may be limited as well as internal rotation; the forward flexion may also be limited. The range of motion which is limited to the largest extent is taken as an index of the limited range of motion for the entire joint. For example, if there was a reduction of 50% of forward flexion; 15% in extension; 10% in external rotation, the 50% loss is used as an index for the total loss of motion in that shoulder. So we have 50% of 33 1/3%, or 17%. We then test the strength of the arm radical with the spring balance and coördination with the peg hole test.

The hand radical is next examined. The function of the hand may be compared to a pair of pliers and a hook. Through the ability of the thumb to touch the tips of each finger, the hand acts as a pair of forceps. Now these mechanical motions may again be crystallized into three essential functions of this tool, namely, the grasping power for small objects between the folds of the fingers, the grasping power for large objects between the fingers and the palm, and the opposition between the thumb and the tips of the fingers.

Now, here again we ascribe an equal value to those three functions. If a man loses the ability to grasp small objects between the folds of his fingers, he has lost one-third of the function of the hand unit. If he has lost the ability to grasp large objects due to fractures or other injuries, disabilities related to the fingers, he has lost one-third and he is unable to place his thumbs to the tip of each of his fingers. This function of opposition, however, we know, is slightly more important than the other two functions, because it can substitute for these other functions to a slight extent. However, for practical purposes, we ascribe an equal value to the three.

Now, for a few illustrative cases. You saw before that the arm radical, in this compound lever, had a disability of 17% in motion, 11% in strength, and 7% in coördination.

Here again we arbitrarily take the larger disability as the disability of the arm radical.

Now, we have a fracture of the head of the radius with possible impairment of flexion and extension of the elbow, and some weakness in the arm. We find the disability of the arm radical to be 24%. In the hand radical, however, there is no impairment in any way. There is no limitation of grasping ability of the folds of the fingers against themselves, or against the palm or opposition. There is no disability at all in the hands. But there is a disability in the arm radical unit. On the assumption that the strength of a chain is no greater than the weakest link, the disability of the entire arm depends on the larger disability of either radical. The fracture or injury to the head of the radius with poor position is, therefore, a 24% loss of use of that arm.

As I told you before, the schedules in the workmen's compensation acts say nothing about back injuries, head injuries, chest injuries, and so on, and yet we are charged with the responsibility of estimating in all those cases. Now, estimating back injuries or head injuries is a very difficult problem, because we have not the comparative basis that we have with the extremities; and, secondly, there is such a wide variation in motion and muscular strength in a large group of individuals that we find it difficult to decide what is normal.

For example, you see here a man with a fairly good range of motion in the spine, and here you see a man with his spine in sort of a high-diving position. Here you see changes in the spine or limitation of motion in the spine due to arthritic or hypertrophic changes. In a large group of individuals it is almost impossible to arrive at any norm. In the beginning, we found the problem so difficult that we simply left it to a referee for estimation, because our guesses, or so-called estimate was no better than that of the referee. We opened, however, a workshop, where men with injuries other than of the extremities would come for a period of observation, where we could observe them doing and performing manual work. The shop consisted of a carpenter shop, printing shop, show-card writing shop, loom-making, and a few other items.

Here we can start the individual and watch the process, letting him cut out toys with a coping saw. We graduate him up till he is able to perform what we call standard tasks, using hammers, saws, and files, until finally he is doing heavy carpentry work, climbing ladders, lifting, and various other sorts of work. We have classified the three grades of work into three kinds, and ascribe a value in accordance with the amount of work a man can do. Persons with head injuries, back injuries, injuries to the kidney, chest injuries, or abdominal injuries are kept under close scrutiny and observation so we can actually determine to just what exact extent of the man's capacity for work has been impaired. It is a laboratory for estimating and determining the man's working capacity. Fortunately a man comes in with a serious disability such as a fractured spine and finds, to his own astonishment, that he can perform a larger degree of work than he expected. We had one man who had a fractured skull and a fractured hip. Following his fractured skull he developed convulsive seizures that required hospitalization in an institution for epileptics for a period of six years. Gradually the convulsions subsided with the use of sedatives, and were reduced to one every two weeks. This man was brought to our curative work shop to determine just what working capacity he had. He had already received an award of 100% total permanent disability. He was in the shop for a period of several months. During that time he gradually acquainted himself with the different work operations in the shop, and, after a period of eight months, we were able to place him as a telephone operator temporarily in a chemical plant, making $25 a week, and later got a job for him as cashier in a restaurant.

We had another case of a man who sustained a severe head injury and had a decompression operation, and for eleven years was unable to work, because of a severe

ataxia. We brought him into this shop and placed him at a seated task, and finally were able to keep him standing for six hours a day doing all sorts of heavy carpentry. The man at one time was a musician, and hence had a desire to go back into musical work. We later secured a position for him as assistant instructor in one of the local schools for crippled children. That is only one example. We have any number of cases that started with severe disability, and after a period in the work shop decided for themselves that they could work, and that they had a reasonable degree of working capacity.

Now, psychoneuroses are so benefitted by this treatment that a man who looks to be 100% disabled when he first comes in, finds himself to be completely able to work after varying periods of time. My experience with the psychoneurotic cases leads me to the conclusion that the large majority of them get well, particularly after settlement. As to the amount of the settlement, it does not matter, as long as the litigation is definitely disposed of. However, there are some patients who do not get well following the termination of the litigation. Lump sum payments do not help them. In those cases something else exists which is responsible for the symptoms.

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A STUDY OF SADISM *

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There are at least two phases of medicine that are of interest to the psychologist, and through which the psychologist can make some contribution to medicine, law, religion, and education. These phases are neurology and physiology.

Hysteria will serve as an example of a neurological situation induced by a psychological factor. In many cases the cure of hysteria has been brought about through psychological means. Hypnotism which is closely allied to hysteria (at least according to Charcot and Janet) also involves both neurology and psychology.

From the standpoint of physiology I may call attention on the one hand to the researches of the late Dr. House, of Texas, with his "truth serum," or scopolamin, by means of which he was able to secure true confessions regarding crimes from criminals who in their normal physiological condition resisted all attempts to have the truth extracted from them. Contemporaneously with the work of Dr. House I may cite what has been of deeper interest and more extended experimentation, namely, the detection of lying in the giving of testimony by means of significant changes in the blood pressure and breathing, through the use of the pneumograph and sphygmograph. Here we have an interesting combination of three professions—a union of medicine and psychology in the solution of a problem of law.

Another field often involving these three professions is that of the perversions, such as sadism, masochism, and exhibitionism. Sadism is perhaps the most common among these, and there are many notorious examples of it such as the Loeb-Leopold case, the Harry K. Thaw case (in its later stages), the Hickman case, and the Powers case. The Powers case is of unusual interest to us since it took place within our own state and was of such virulence and atrocity as to challenge human explanation.

We have called this type of behavior "sadism." But when we give a crime a name and classification we have not thereby explained it. We must seek further for the hidden sources of the overt act,—the motives

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and powerful impulses that impel or compel the abnormal behavior.

According to Kraft-Ebing, a prominent authority in the psychology of sex, sadism is the impulse to cruel and violent treatment of the opposite sex, and the coloring of the idea of such acts with lustful feeling. This cruelty may take the form of a desire to humiliate, hurt or even destroy or kill others in order to create sexual pleasure for the perpetrator. Other and milder forms of this tendency appear in the tendency to bite, pinch and fight the victim. At times the punishment may be inflicted by the perpetrator upon himself, in which case the behavior is called masochism, but in the latter case, as in the former, the perpetrator is supposed to experience a peculiar sexual pleasure. Perversions of this type are not of recent origin, but have existed throughout the centuries. For example, the Cæsars—Nero and Tiberius—took delight in having youths and maidens slaughtered before their eyes, and it was not uncommon for them to light up the arena at night by means of human torches made by soaking live human beings in tar and oil and setting their flaming bodies up on posts. The shrieks of pain on the part of the unhappy victims only added to the lustful pleasure of the occasion.

There are traces of sadism in various religious practices, such as sacrificing animals or even human beings, persecutions, the excessive appeal to the doctrine of hell fire, and the ultra-puritanical suppression of even harmless pleasure. Traces of masochism are seen in self-mutilation, excessive penance, voluntary martyrdom, asceticism, resignation, self-abnegation, and celibacy.

A rehearsal of the strange, excessive, and revolting form of behavior such as was manifested in the Powers case might easily lead one to the conclusion that the criminal is in a class by himself, sharply separated from the mass of normal or law-abiding individuals. But with such a conclusion the facts do not agree. The instinctive and emotional tendencies that lie at the root of these excessive practices are the common heritage of all mankind. The difference between the sadist and the normal individual is one of degree, not of kind. We may differentiate roughly three degrees of development of any tendency, and call them *hypo*, *normal*, and *hyper* development. In normal life each sex develops certain tendencies and attitudes. What men are impelled to give, women are impelled to receive. Display of physical force, for example, is characteristic of one sex, and submission to it characteristic of the other. Even the struggle against force on the part of the normal female is but an attempt to heighten the pleasure of submission a moment later. In certain cases submission is abject and complete and tends in the direction of the abnormal. Not long ago a university student, an estimable young woman, who was deeply in love with another student but who had not yet succeeded in winning for herself his admiration, stated that if she could only have the affection of this young man she would just enjoy having him trample on her prostrate body. From apparently reliable sources we also have the interesting information that the women in the interior districts of Russia still enjoy being whipped by their husbands. Their love and admiration for their husbands seem to thrive on rough and cruel treatment.

Brill gives us another interesting sidelight on the relation of the normal to the abnormal. To quote—"It is well known that children, unlike normal adults, like to show themselves naked. This performance is technically called exhibition. Shame is a matter of education and must be taught. Cruelty is also common in childhood. It is self-evident that these two practices are closely connected with sex. When these impulses are properly inhibited and developed they lead to the development of modesty and sympathy. But it is seldom that these impulses are completely inhibited. They are apt to manifest themselves indirectly. Thus, persons inclined to obscene joking usually conceal a desire to exhibit, and persons with sadistic or cruel components in their sexuality are most successful in wit."

Abnormal behavior is then simply excessive development of normal impulses. The love-bite is an instance that indicates that even the most terrible and repugnant sexual perversions are still demonstrably linked on the phenomena that are fundamentally normal. Sexual murder, including strangling, is but an exaggerated aspect of physical seizure, domination and forcible embrace of the victim, which is one of the primitive elements of courtship.

In what we have said thus far we have rather tacitly assumed that the sexual impulse lay at the basis of the particular crimes cited, and of sadism and masochism in general. It must not be assumed, however, that this view is necessarily the authentic explanation of these forms of abnormal behavior. Not all sadistic crimes are heterosexual. But even if we were to confine our discussion to heterosexual cases it does not necessarily follow that because one sex attacks another a sexual crime has been committed. The motive and the act both may be only remotely related to sex or not related at all. It was Freud who first interpreted all abnormal conduct, as well as all normal conduct, in terms of sex, and who inspired the authors quoted in the earlier part of this paper.

Freud believes that sex manifestations appear in infancy, that at the age of about four, this impulse, or libido, becomes repressed among normal children through cultural influences, and that at the age of puberty it reappears. In neurotics the repression of infantile sexuality has not been successful, and abnormal symptoms appear which form the basis for perversions. Freud's conclusion is then that perversions are of course sexual in origin.

Adler and Jung differ radically with Freud in their interpretation of the "libido" which Freud identified with sex energy.

For Jung libido is the urge of life which drives the individual on to find adaptation and satisfaction in his surroundings. Conflicts and perversions do not depend so much upon imperfect impressions of the sex impulse in childhood as in present conflicting influences of the various tendencies within the individual. Some of these influences may be sexual, but they need not be.

Adler's conception of the libido is that it is the energy by which each individual is led through devious paths toward the goal of complete mastery or masculinity. Sex is rather an incidental or accidental complication in this process which may color the ambitions of the individual, but has no dynamic influence in shaping his real ends.

The small boy who pulls wings off flies or hangs the family cat is not, in Adler's opinion, doing anything sexual, but in later life when sex function has developed it may become complicated by this childish tendency to cruelty to such an extent that a sadistic perversion arises.

FOREIGN BODIES

"Fishing in Food and Air Passages" is the duty of the doctor who is confronted by a patient suffering from a foreign body accident in the throat. Many a strange haul is made when the physician angles for foreign bodies. Safety-pins, common pins, coins, jewelry, hardware, foods, bones, cake-candle holders and even a cap from a catsup bottle have been among the items in the physician's catch.

Drs. Chevalier Jackson and Chevalier L. Jackson in the January *Hygeia* emphasize the point that children get foreign bodies into their throats through imitating older persons. It is only natural for children to put coins in between their teeth if mother does so or to keep safety-pins in their mouths while dressing dolls if mother dresses the children in like manner.

When the child is sleeping, dozing, running, jumping, laughing, crying or sobbing, it is extremely dangerous to have in the mouth any substance that may be swallowed or inhaled. Carelessness in activities of this kind has caused many foreign body accidents.

In older persons, hasty eating with little mastication produces many foreign body accidents. Even though the butcher is careless in breaking a bone and the housewife is careless in preparing food, no one should swallow food so rapidly that the object is not detected in the mouth.

MARITAL MALADJUSTMENTS AS THEY AFFECT THE PHYSICIAN *

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As far as I am aware, no discussion relating to this subject has ever been presented before this society. We have been sated with the pros and cons of medical and surgical treatment of peptic ulcer, gall bladder disease, syphilis, tuberculosis, and other factors in the super-structure of medicine, but nothing is said of the fundamentals which underlie all human activities. Someone has very well said that of all vital questions, there is none more important than an understanding of the acts and processes that insure the perpetuation of the human race. There is no topic whose interest is at once more humanly universal and more acutely personal, and at the same time, none of which wise advice is more needed, especially in view of the appalling blunders and follies man has committed in all times and lands under the pitiless sway of blind, wanton impulse.

During the four years past I have had a certain definite interest in the various factors in the sexual side of marriage. This study has included the records of my own practice, those of other interested physicians and clinics, and also data secured from different welfare agencies and members of the legal profession, who are in actual contact with the end-product obtained from the improper treatment of these problems.

I am firmly convinced that a large portion of the blame for such circumstances may well be placed at the doorstep of our profession. You may question the propriety of such a belief, or accusation, if you prefer, and ask what connection exists between such problems and the practice of medicine. Your answer can easily be obtained by a mental review of the responsibilities which the conscientious physician assumes toward the laity. There are two primary factors in the human make-up which govern every activity of our lives; they are self-preservation and procreation. If the physician, through his professional obligation, must use every possible measure to preserve life, why should he not be equally obligated to assume the rôle of mentor and advisor in problems relating to procreation? The subject has a sociologic, economic, and physiologic aspect, so we must be part-time sociologists, economists, and physiologists in dealing with the problems of preservation and procreation; one of which preserves the individual, and the other the race. Racial preservation is more urgent than individual survival, therefore the urge of sex is stronger than hunger or fear. In civilization we may daily observe that human beings expose themselves to all possible dangers and difficulties in order to satisfy this imperious urge even to the sacrifice of life itself. If we, as physicians, both in the past and during the present, have qualified ourselves as competent advisors in the preservation of life, why are we not as fully obligated to familiarize ourselves with the proper means for keeping the other primary instinct on a rational basis, for ourselves, as well as the patient? However, we can not teach that with which we are unfamiliar, and God knows that if our knowledge of general medicine and therapeutics were as scanty as our knowledge of sex and its problems, our patients would be placed and kept in a very precarious position. We have been consulted on several occasions by physicians and their wives regarding their individual problems. This, together with knowledge gained from many other sources, is certain proof of the need for awakening ourselves to the rather appalling conditions in which a large percentage of men and women attempt to live a happy and normal married life.

* Read before the Medical Review Society, Huntington, December 1, 1932.

In Van de Velde's excellent treatise on Ideal Marriage, we read that marriage is indispensable to the social order and absolutely necessary in the interests of children. It offers the only security for the woman, and provides the best background for usefulness and efficiency for man, through his recognition of the responsibilities. Its greatest peril is satiety, weariness and ennui, and the resulting alienation through which the woman suffers more acutely than her partner, who can seek refuge in his work, whereas, her nature, more exclusively emotional, is dependent on personal relationships. The loneliness of mind and heart to which a man can condemn his wife is much more painful and imperious than tyranny or brutality, which public opinion so decisively reprobates. Woman stands far better any regrettable physical maltreatment than she does absolute neglect. A most effective defense against ennui, outside the sexual sphere, is a strong mutual interest in some object that appeals to both with equal force, whether it be the playing of bridge, the cultivation of flowers, collection of stamps, or whatever you will.

If we accept this premise, we must, at the same time, decide whether we should also condone, by our neglect, the unhappiness and misery which result from ignorance of the fundamentals of marital science, or whether we shall, by giving of constructive advice, help in rebuilding these shattered lives, and also act as media of proper advice for the young people who are making a start in marriage. They do not realize the swirling currents of despair, or the reefs of regret and self-pity which await the unwary pilot, and only too often make of marriage a broken wreck.

Marriage both concedes and demands, and no matter how long the courtship, there must be a certain period of adjustment, covering the first one or two years, in which the man and wife really obtain an intimate knowledge of each other's real character, and reaction to changing conditions. It is during this period that they must learn to give and take, conceding different customs or habits and acquiring others, so that the ultimate state will be pleasant and satisfactory to both. If the marriage can survive this initial phase, the chances for a life-time success are immeasurably increased. I feel that there should be no sought-for pregnancy during the first year of marriage, because the addition of a third member to the family often complicates the procedure of adjustment and might be the means of holding people together for a life time of abuse and misery, who would be better off if freed from their shackles and allowed to seek more congenial marital conditions. The adjustment of wife to husband, and husband to wife, is a serious condition in itself and should not be complicated by the concessions necessary to childbirth. It is during the early months of marriage that sins of omission or commission are first planted, which, if not promptly weeded out, insidiously replace the normal activities of marriage with malpractices in thought and action, which can only end in unhappiness and dissatisfaction.

There must be constant thought of the other partner. The man and wife who treat each other with consideration and courtesy, blended together by common sense, need not fear marriage.

However, the strongest mental link in normal married life is the mutual interest, love and care for the children they have themselves produced. The gynecologist has frequent occasion to meet the frustrated woman for whom barrenness means a shattered happiness. He also knows how many marriages are wrecked entirely, and only, because of the fear of unwanted pregnancies. Sex is the foundation of normal marriage, yet most of us do not understand its A B C'c. How, then, can we act as advisors to the laity, when through a misguided sense of reticence and prudishness, we fail either to know or to act. The layman has no realization of his deficiency. The average man, of average potency, who performs his conjugal duties at regular intervals, and with physiologic satisfaction to himself, imagines he has met all the requirements a wife can make. And if she is not satisfied, and remains in a constant

state of suspended gratification, the husband, either with regret or indignation, puts her down as a sexually frigid type, and sooner or later drifts away from his own bedside into other apparently greener pastures. And this phenomenon occurs in far too many instances in our supposed era of civilization and enlightenment! Only too often the supposedly beautiful sacrament of marriage is but a form of legalized prostitution, with one exception, —the street-walker has an unlimited clientele, and collects the cash in advance.

Then we have another too common state of affairs,—if the man has been fortunate enough to wed a woman of more spontaneous temperament who is obviously not indifferent to the marital rites, and if those rites occur in a monotonous schedule with no varieties of local or general stimulation—satiety is bound to intrude into the consciousness of both within a very few years. Inasmuch as variety is the only relief for monotony, the sexually illiterate male or female seeks the variation by means of another individual rather than in a change of tactics with the marital partner. The so-called normal male fails to realize that there are numberless delicate modifications of the sexual act lying strictly within the bounds of normality with which to vary the monotonous routine, which may well be expressed by the old saying,—"On again, off again, Finnegan." Or if he guesses the truth, his ignorance leads him to class there variations as evidences of degeneracy or debauchery, for he fails to realize that what is physiologically sound is also ethically sound. He thinks his wife is far above that sort of thing, leaves her more and more to herself, seeks the diversity of stimulation outside the home, and only too often ends in real debauchery as a consequence.

With a very small amount of thought, we can all realize the presence of the conditions above noted which occur in the married life of people from all stages of life. The criminality of our profession, however, lies more in the fact that we neglect to lift a helping hand to these unfortunates, who in a majority of instances, are only too glad to be led out of their ignorant state. We can not help but realize that two things alone are the cause of most of the marital unhappiness which is filling our divorce courts,—they are ignorance and false modesty. These people are completely ignorant of the essential facts of marital science, and their false sense of modesty and pride often keep them from seeking help, although the breaking down of this wall of reserve by the diplomatic physician will develop a feeling of confidence on the patient's part and a coöperative spirit in correcting the condition.

Let me discuss briefly the ways and means at our command to combat this insidious menace. The plan of battle here is identical to that used in our battle against cancer. It consists of two objectives: (1) The correction of existing conditions as individual cases present themselves, and (2) prevention of further abuse by educational means. The profession first and secondly the laity, must be made definitely aware of the fact that marital happiness and success is based upon one factor, the proper understanding of the physiology of sex, and that all other factors are purely secondary. The physiologic processes involved are well known by us who are physicians; it is only in their application that we sin by omission, in failing to recognize the symptoms, whether gross or poorly defined, of sexual incompatibility in those patients.

I have in my possession the complete records of sixty-eight women who have been referred during the past five months from welfare workers for contraceptive advice. They are mostly all individuals who, before our present economic upheaval, had incomes sufficient for the necessities and a few luxuries of life. These incomes ranged from $100 to $255 per month. The ages of the patients ranged from twenty-four to forty-seven, with an average age of thirty-six. Sixty-one of the sixty-eight cases had unmistakable evidence of birth injuries varying from a moderate perineal relaxation to partial uterine prolapse, with all the intermediary conditions such as rectocele, cystocele, uterine displacement, etc.

Of the sixty-one cases, only two or three per cent have had even an occasional sense of gratification with the sexual act, since receiving the birth trauma. In sixteen cases, or thirty per cent, the patient felt that she could be normal in spite of the physical conditions, if it were not for the fear of repeated pregnancy. We found that in these sixteen cases the lacerations or displacement was less severe than in the remaining forty-three cases. Although this is a comparatively small series, I think there is definite evidence of the direct relation of unrepaired birth injuries to proper fulfillment of the sexual act. In the remaining seven cases where there was no pelvic pathology, sexual satisfaction was evidenced at frequent intervals in four cases and only infrequently during the week following the menses in the other three. It is interesting to note that the average number of years of marriage in the sixty-one cases, was seventeen, and the average of children born was seven and one-half during the seventeen years. In the smaller series of more normal married life, the average duration of married life was eleven years and the number of children born was three and one-fourth per marriage. I think these figures will at least make us think of the probable direct relation of frequent pregnancies and birth trauma to a diminution in sexual impulse. One could go on ad infinitum with a discussion of ways and means of helping these unfortunate couples from a psychologic and eugenic standpoint, but a prolonged discussion would only increase the feeling of our responsibility. Let me close with one thought,—if men would give to their married life one-tenth of the trouble and thought they give to their business or profession, and if women would give one-tenth of the energy and thought expended in their religious, social and civic activities, to their responsibilities as wives, the majority of marriages would be happy.

ANTE-PARTUM HEMORRHAGE *

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THERE is nothing more alarming to both the patient and the physician than bleeding during pregnancy. The woman usually recognizes that it is a sign of grave import, and will almost always coöperate with her physician and follow his instructions to notify him at once should she begin to bleed. Many physicians instruct their patients to go to bed immediately and to have some one else call. This is an excellent idea and one which all of us should adopt.

From the standpoint of the physician, bleeding should always be considered seriously and must never be disregarded. The patient requires careful attention, the cause must be sought and found, and the proper treatment promptly instituted.

There are several causes of ante-partum hemorrhage, but time permits that we consider only a few of the more frequent and severe. If, for the purpose of convenience, we classify these according to the duration of pregnancy we find, first, bleeding because of:

Abortion.—Here we may have to deal with a threatened, an inevitable or an incomplete abortion. In any one of these three types we may have a serious and very rarely a fatal hemorrhage. I must disagree with the statement of many obstetricians and gynecologists that women do not bleed to death from abortions, for I have seen an instance in which this did happen.

At this point it seems wise to remind you that in a rupture of an ectopic pregnancy, the pain precedes the bleeding, while in abortions of uterine pregnancies the reverse is true and

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we have bleeding first and following it, pain. This is a simple point to remember and an important one from a diagnostic view.

In the threatened abortion, the bleeding is usually mild and requires no active treatment; indeed, all of our efforts at this time should be directed toward quieting the patient. In many, if not the majority of the cases of threatened abortion, treatment is of no avail and the condition passes over to one of inevitable abortion. The bleeding now is more severe and there are many cases in which we feel compelled to interfere because of this very thing, marked bleeding. Should such a condition arise, one should not hesitate, but should empty the uterus with the fingers promptly and under the most careful aseptic technique possible. Instrumentation is inadvisable because of the danger of perforation of the uterus.

Unless the bleeding is severe, however, better results are obtained by waiting for nature to complete the abortion. In the incomplete abortions, one sees at times cases which are bleeding severely and a manual removal of the uterine contents is indicated, but again, unless hemorrhage compels it, interference should not be attempted because of the marked risk of infection. Sometimes it is necessary to wait several days for the uterus to empty itself, but we are always justified in waiting, and especially is this true in the presence of an existing infection.

In *premature separation of the placenta*, the amount of bleeding and likewise the treatment depends largely on the amount of separation. We not infrequently see patients who are in labor and progressing normally who have a small area of placental separation with a slight trickle of blood. Here no active treatment is necessary and a policy of watchful waiting should be adopted. They will, almost without exception, deliver themselves spontaneously, the placenta may be easily expressed and neither the mother or child will present any difficulties.

But these are not the real causes of premature separation of the placenta, and the majority of the writers when they mention this subject have reference to those unfortunate individuals who have either a complete or almost complete placental separation. This is always a most serious condition, the maternal mortality being about 60% and the fetal 95%. It is extremely important that an early and correct diagnosis be made and the proper treatment promptly instituted.

The diagnosis should offer no great difficulty. A woman in the latter part of her pregnancy has severe shock and prostration with or without external bleeding and severe pain in her abdomen, more or less constant. Examination reveals a tender, tetanically contracted uterus (sometimes larger than it should be, if there is concealed hemorrhage) and absence of fetal heart sounds. A ruptured uterus might give a somewhat similar picture but with a little care the differentiation should be easily made. Treatment consists of emptying the uterus in the most conservative manner and as quickly as possible, conserving blood loss and combatting shock. One should be alert for post-partum hemorrhage and should treat it promptly and vigorously.

Conditions surrounding the patient, the amount of cervical obliteration and dilatation, the duration of pregnancy and the apparent separation are all factors which decide the method to be employed in emptying the uterus. In recent years the trend has been more and more toward cesarean sections and published reports of this method are very encouraging. The maternal mortality has been greatly reduced by this method of treatment and there is much less traumatism as well.

In *placenta previa* it is of the greatest importance to remember that the hemorrhage is always recurrent and eventually fatal if not treated promptly and properly. The first hemorrhage is usually slight and almost always ceases in a short time. There may be several minor hemorrhages, but it is perfectly possible and frequently happens that the second hemorrhage is the fatal one. There is no reason for delaying treatment in placenta previa and every reason for instituting it promptly. The diagnosis is one of the simplest

in the realms of obstetrics and can in practically every instance be made on the one symptom of painless, causeless bleeding in the last trimester of pregnancy. An examination in these cases is fraught with the dangers of infection and hemorrhage and should not be undertaken without the most scrupulous technique and all preparations made for immediate delivery should bleeding occur.

The treatment is again the emptying of the uterus and this should be done as soon as possible after the initial hemorrhage. Let me repeat, there is nothing to be gained by waiting in these cases, and everything to be lost. Here, as in premature separation, the modern trend is more and more toward cesarean section and, without doubt, the results for both mother and child fully justify this method of treatment. Many clinics are now reporting fairly large numbers of cases treated by cesarean section with an almost unbelievable low maternal and fetal mortality, much lower than could possibly be obtained by any other method of treatment. These results, however, would not be possible without the early recognition of the condition and the prompt emptying of the uterus.

In all cases of hemorrhage, one should lend every effort to controlling the hemorrhage, to replacing the lost blood with either blood or some other suitable fluid and to the general systemic treatment of the patient. Blood transfusions are becoming more and more simple every day and frequently make for a much smoother convalescence even if they do not actually save life.

TRANS-URETHRAL RESECTION OF THE PROSTATE GLAND *

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THE writer of this paper will not attempt to go into the details of this operation of trans-urethral resection, but will confine his remarks to the subject in a general way. As an introductory remark, may I bring to your attention the fact that urologists have persistently, since the time of Mercier over a century ago, tried to devise some way of escape from the much dreaded radical two-stage prostectomy.

It is interesting and only just to bring before you in a chronological order the names of the various men who have from time to time contributed to the development of this newly accepted electrical operation for prostatic obstruction, and due credit is to be given each man for its present perfection.

First, I would like to mention Bottine, who in 1874 originated the idea of removing prostatic obstruction through the urethera with the aid of the old galvanic current. This process was not successful because it did not cut the obstruction away but burned the tissues instead and, as the results were disastrous, the method soon fell into disrepute and disuse.

Fifteen years later, 1889, Chetwood devised the operation of exposing the bladder neck through the perineum and excising the obstructing bar with the use of galvanocautery. This was a slight advance over Bottine's idea, but the operation did not prove successful and was discarded. Twenty years later, Hugh Young, of Baltimore, introduced a punch instrument, adding in 1911 an electrical cautery attachment for the control of hemorrhage. This combination was a definite step forward in the right direction. But it also failed to make any marked success chiefly because of its blindness in operation. In 1920, Caulk, of St. Louis, provided us with his cautery punch apparatus which was identical with Young's idea except that Caulk added visualization during the operation.

* Read before the Greenbrier Valley Medical Society, at Ronceverte, September 9, 1932.

We were now getting to realize that this mode of approach to relieve prostatic obstruction was taking a definite place in urology. In 1926 the greatest advance came when Stern, of New York, presented an instrument which employed the new cutting current—a so-called "undamped" oscillating current which, when properly applied, would actually cut the tissue under water without charring. The visualization in this instrument was so perfected that each step could be followed. But since this cutting current did not provide for the control of hemorrhage, there was still a big gap to fill. Then a year later, in 1927, T. M. Davis, of Charlotte, North Carolina, presented an improvement over the Stern instrument by adding the use of the coagulating current. Thus we had in one instrument both the cutting and the coagulating currents which could be controlled by a two-way switch.

Now we have an instrument which can both cut and control hemorrhage under water combined with perfect visualization. This instrument has been named the resectoscope. In 1931 the resourceful Joseph McCarthy, of New York, using the ideas of Stern and Davis, perfected a resectoscope, using a semi-loop electrode with both direct and indirect vision. This instrument has many definite advantages over the Stern-Davis resectoscope. I will demonstrate the use of the McCarthy instrument later on. Now, as has been shown from the above history of the development of this electrical operation, a great step has been made in the relief of prostatic obstruction from a non-surgical standpoint.

Permit me to pause for a few minutes as a pleasant digression to remind you that romance in medicine and its specialties is not dead. The progress of our noble profession marches on and with each decade newer and better methods are presented to relieve the sufferings of humanity. Who can say that we have no Pasteurs, no Erhlichs, no Listers in our present generation? Mark the introduction of liver extract for pernicious anemia, insulin for diabetes, and many other discoveries too numerous to mention, all occurring within our own span of life.

Electricity has opened up many avenues for experimentation in the practice of medicine and every branch of the profession is finding more use for it as time goes on. Diathermy is having its proper application. The cutting current is replacing the knife, and in neuro-surgery as in urology, it has taken a permanent place.

Now I come back to the real subject of this paper and call your attention to the following advantages of trans-urethral prostatotomy over the old radical two-stage operation:

First.—The mortality has been reduced to practically nil and the morbidity decreased to a minimum.

Second.—The average stay in the hospital has been reduced to days instead of months.

Third.—The case which formerly would not submit to a radical operation is now gladly accepting this minor procedure.

Fourth.—The permanence of relief appears to be comparable to that of radical prostatectomy and the procedure is particularly valuable in cases of inoperable carcinoma of the prostate gland and, in my opinion, this includes all cases of diagnosticable prostatic malignancy.

Fifth.—It may be conservatively estimated that eighty to ninety per cent of cases suffering from prostatism may be completely relieved by this mode of operation.

Sixth.—Even in cases of extremely large hypertrophied prostates when two or more sittings are necessary, resection does not have the discomfort and the comparative surgical hazard of the old two-stage prostatectomy.

Seventh.—The same preliminary study and preparation as is made before doing a radical prostatectomy is done before doing a trans-urethral prostatic resection.

Eighth.—Only men trained in cystoscopy and urologic surgery should attempt this operation.

In conclusion, let me say that this newly accepted procedure which is designated trans-urethral prostatotomy bids fair to exceed the fondest hopes of its sponsors.

The three cases reported are typical of a series of twenty-six performed to date.

Case Reports.—CASE No. 1: White male, age 69 years. Has been bothered for the past six or seven years with nocturia, and has been voiding six to seven times a night. This frequency has been on the increase for the past two years. There has been no complete stoppage of urine. Patient has a sense of weight in pelvis and perineal region. For the past year has had difficulty in starting to void.

Examination reveals an enlarged median bar of prostate. Cystoscope passes easily, no strictures, no stones. There is some trabeculization of the bladder. No evidence of tumor. Residual urine, 67 c.c.

Patient admitted to hospital four days before operation and retention cather put into bladder for decompression. Urinalysis shows no albumin and no casts. Renal function (P.S.P.) averaging 55% output in two hours. Patient operated four days after admission. Following operation there was no shock and no hemorrhage. Patient discharged from hospital seven days after operation. At discharge there was no residual urine.

Since discharge patient has been checked several times. He is at present feeling fine, has no nocturia, no dribbling, and no residual urine.

CASE No. 2: White male, age 74. Has been having dribbling, nocturia, and difficulty in starting flow for about six years. During the past two months this has been becoming worse. At time of admission patient had not voided for about sixty hours and family physician could not pass catheter. Under spinal anesthesia cystoscope was passed. Examination revealed a markedly enlarged median bar of the prostate and general enlargement.

Urinalysis reveals a heavy trace of albumin and many hyaline casts. Renal functions (P. S. P.) 33%. Patient was decompressed for twenty days with no change in the status of the kidney condition.

Discharged from the hospital nine days after operation. At time of discharge there was no residual urine and no discomfort. Has been checked twice since operation. On both occasions patient was feeling well, and there was no residual urine. Had complete control of urinary flow.

CASE No. 3: White male, age 76 years. Has had nocturia, dysuria, and dribbling for four years. Five weeks prior to admission there had been a complete stoppage of the urinary flow. At that time the patient was admitted to a hospital near his home. There a supra-pubic drainage was done, and the patient told that he had an inoperable carcinoma of the prostate.

On admission to our hospital the patient was well decompressed. The prostate was generally enlarged and nodular. After examination we too thought that the patient had a carcinoma. It was impossible to pass even an infant catheter and it was thought that it would probably be impossible to pass the resectoscope. However, with difficulty a ureteral catheter was threaded into the bladder to act as a guide.

After operation patient had no shock and felt well after the first few days. On discharge from the hospital, two weeks after operation, the supra-pubic wound had healed. Patient had some dribbling but on the whole was able to control spincter action very well. Micro-section of the gland showed adenocarcinoma.

At the present time this patient is feeling fairly well. In this case the operation was performed to afford the patient comfort.

PERNICIOUS ANEMIA

Richard H. Young, New York, presents an analysis of the neurologic aspects in patients with pernicious anemia who have been admitted to the Peter Bent Brigham Hospital from its opening in 1913 to January, 1931. In this series of 515 cases there were 103, or 20 per cent, of the cases with well defined cord changes marked by reflex changes and ataxia. The incidence would have been much higher if lesser changes of the nervous system had been included. From this observation the author concludes that the associated lesions of the central nervous system in pernicious anemia may present a variegated symptomatology and may be disseminated in location.—*Journal A.M.A.*

SOME BENIGN PATHOLOGICAL FINDINGS IN FOSSAE OF ROSENMULLER: TREATMENT AND SEQUEL *

By C. E. PARK, M.D.
Parkersburg, W. Va.

THE persistence of adhesions found in Rosenmuller's fossæ in adult life, the painful symptoms accompanying this condition found in nearly two hundred cases, and the simple treatment has prompted me to suggest to you more careful study of these important recesses and their susceptibility to physical changes by contiguity of recurring inflamed organs or tissues. Inasmuch as the mucous membrane of the posterior pillars of the tonsils is contiguous membrane, we get pressure from the tonsils when enlarged and inflamed. From the contact, membraneous bands are formed, which interfere with the potency of the eustachian orifice. From this form, plastic adhesions in the tube proper, producing a type of pressure deafness of varying degrees of insanity, many are only slightly involved, but some cases show extreme deafness. Nearly all are relieved by the simple manipulation to be given you. However, it is not only the deaf cases to be relieved, but those coming to you with painful pressure symptoms in the deep portions of the external ear, radiating down in the muscles of the neck of the side involved. This is usually suggested by the patient pressing a finger under the pinna of ear upward and inward, usually bilateral, but often on only one side, and always the sound conducting mechanism is involved.

As you know, the fossæ of Rosenmuller are depressions on either side of the orifice of the eustachian tube, in the lateral wall of naso-pharynx. In health they are found free of débris and lined with mucous membrane as is the naso-pharynx and tube. As the intention of this discourse is to show you the abnormal condition and its relation to the ear and its sound conducting apparatus, I must briefly describe the auditory or eustachian tube which opens in the lateral wall of the naso-pharynx. Its course is upward and outward with a slight lateral curve. It is about twenty-five millimeters long, and ends in the anterior wall of the tympanic cavity. The inner two-thirds is cartilage, and outer one-third bone. At the junction of these two parts is a normal constriction known as the isthmus, the only narrow part of the tube.

The pharyngeal opening in most persons shows a wide flaring of the upper posterior lip known as the torus tubarius and the wall of the tube is in a great part formed by a triangular plate of cartilage, which is folded upon itself so as to protect the tube on its upper medial aspect. A dense fibrous tissue connects the cartilage below and laterally, and completes the wall of the canal at the naso-pharyngeal opening. From the bony portion of the tube pneumatic cells sometimes exist, forming what are known as the cellulæ tubera, a condition which in middle ear infections may account for the persistent discharge from the tube so often seen.

This discharge, purulent or muco-purulent in character, which is being emptied constantly in the naso-pharynx, produces granulations which I believe to be the beginning of the adhesive process. This is repeatedly made worse by any kind of local infection of the sinuses, nose, or throat, especially when the posterior ethmoid cells are involved.

The pharyngeal orifice lies on a plane with the lower part of the choana, and on a level with the posterior end of the inferior turbinated bone. A fold of mucous membrane, known as the "salpingo-pharyngeal fold," descends upon the side walls of the pharynx from the posterior lip of the auditory tube, and gradually disappears. In the natural state there is a deep recess found behind the pos-

* Read before the West Virginia State Medical Association, at Parkersburg, June 23, 1932.

terior lip of the auditory tube, usually known as the pharyngeal recess, but now suggested as a part of Rosenmuller's fossæ. It being the fossa, we first lodge our eustachian catheter in before drawing forward, downward, and inward over the prominence, and then upward and outward to enter the eustachian orifice.

As we find resistance or obstruction in our attempt to introduce the catheter in many cases, I have made it a routine practice to make a digital examination of this area, and have been rewarded by having my anticipation fulfilled by finding the obstruction and immediately removing it. After allowing a few days to pass, I am able to insert the catheter without resistance. However, in some instances apparent thickening of the orifice is present, and no adhesions are found.

As the primary thought in preparing this paper was to call your attention to the cases we daily overlook that can be relieved by the simple method I am going to suggest under treatment, and to suggest further, that while the great majority of these cases are not operated upon as to tonsils and adenoids, I find many cases that were operated on during childhood that also at a mature age present large masses of adhesions. In two of these cases the mass was so large as to cause me to fear I had broken into a malignancy. However, upon second examination of the patients, I found the fossa clear three weeks later and no bleeding from the manipulations.

These cases come in our daily work, and are selected for this contact examination after thorough examination of mouth, teeth, external ear and canal, and tympanic membrane, as to the retraction, color, light reflex, cicatrices, deposits of lime salts, perforations, etc. Other causes are excluded, such as impacted third molars or eruption of same, loose ligaments of mandibular joint, deep-seated furunculosis of external canal, or eczema. We eliminate systemic diseases during our first examination, such as cardio-vascular, pulmonary, diabetic, anemias, blood pressure, very high or very low, or syphilis, and presenting some of the following symptoms:

Objective.—Eyes bright, but face showing anxiety with furrowed frown, and showing an intense desire to be relieved—many presenting infected tonsils, and deeply congested pillars, with an abundance of mucous secretion bathing the posterior pharyngeal wall in epipharynx.

Subjectively.—A fullness of one or both ears, deep-seated; itching of canals; pain of varying degrees and types; tinnitus of every form, as locusts buzzing, crickets chirping, steam hissing, pulsations, especially when lying on the side involved; and a desire to withdraw mucous from posterior nares, hacking and spitting a constantly increasing amount of mucous and saliva.

Treatment.—Place the patient in a semi-recumbent position, paint surface of epipharynx with a 10% solution of cocaine, or 4% butyn, or 2% nupercaine. The best results are obtained by using bent applicators through the mouth, then using a sterile reinforced gum finger cot on each index finger, lubricated with KY jelly or white vaseline, standing at right side of the patient for right side adhesions, and left for opposite side.

The finger is inserted in naso-pharynx, and quickly but gently the cavity is exposed. If adhesions are found, break them up immediately by one or two see-sawing movements. This should be done quickly, and the hand removed from the mouth, inasmuch as some patients bleed quite freely. All will bleed some, but occasionally some bleed profusely. This is easily controlled by slight pressure or by using thormboplastin, fibrogen, or other hemostatics. Right and left should be done separately and followed by a spray of some mild antiseptic oil or solution. The patient readily forgives you for the apparent rough treatment and returns to you for a second examination two or three weeks later, enabling you to prove your work.

This treatment is given all operated cases, either local or general, and to all unoperated cases coming with any or all of the symptoms mentioned above, regardless of age or sex, when we are permitted to do so.

Sequel.—In only one instance have I had

any disagreeable symptoms follow, and this was an aggravation of an acute ear, which led to a myringotomy two days later. It entirely cleared up in a few days and gave the patient much relief from pressure and an improvement in hearing.

From the list of about two hundred cases I have operated upon in this manner, improvement has been noted in at least 90%, and of these cases, hearing has been improved in about all, head noises in about 60%, and pressure symptoms in and about ears in practically all of them. No swelling of tissues or glands follows manipulation. Hemorrhages are infrequent and small, and general improvement of the patient follows. There is improvement in patient's phonation, and there are fewer attacks of pharyngitis, granular and sicca. The improvement in hearing has been for the whispered and spoken voice.

Tuning fork reports are not available on account of the time taken to get them and unsatisfactory end results obtained by the various forks used. However, they were used frequently and often enough to exclude nerve deafness and prove obstructive or pressure deafness as found in most cases of O.M.C.C. or the residual type of O.M.P.C., and medium grade cases of otosclerosis wherein we find a raising of the lower tone limit and a reduction of the higher tone limits, an increase over the normal of bone conduction. The Rinne is negative. The Weber may, or may not, be latheralized. Senile deafness can be improved when the eustachian tube is patent.

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EPIDURAL INJECTION AS A TREATMENT FOR SCIATIC PAIN *

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PAIN along the distribution of the sciatic nerve constitutes one of the most frequent symptoms that a surgeon has to consider if he is practicing in an industrial community. During the past two years it has been increasingly difficult to have laborers return to work who have received injuries while employed. This is due, presumably, to the relatively greater compensation which they enjoy while incapacitated. "Lumbago" and "sciatica" have been two of the most common symptoms that have kept men from their jobs. Pain along the distribution of the sciatic nerve has been treated by numerous methods without due regard to its etiology. Rosenbeck and Finkelstein classified "sciatica" into three large groups: symptomatic, orthopedic, and that due to a neuritis. They thought that the symptomatic group responded well to epidural and perineural injections. Beck successfully treated an obstinate case of "sciatica" by placing the thigh in a flexed position with the knee extended and maintaining this position for an increased duration of time daily until anesthesia over the dorsum of the foot appeared. The value of this treatment was due to gradual stretching of the nerve. He stated that he had formerly exposed the nerve and had stretched it by placing the finger beneath it and pulling upward with a force of about fifteen pounds. Occasionally the latter procedure produced temporary paralysis of the extremity. Rogers thought that there

* Read before the McDowell County Medical Society, June 8, 1932.

was no such condition as "idiopathic sciatica"; he attributed such symptoms to a pathological condition about the origin of the nerve, which condition existed in a greater number of cases in the bone or the articulations. Jansen pointed out that the symptom of "sciatica" may result from neuritis of the sciatic nerve, pressure upon the nerve as that resulting from pregnancy, tumors, abscesses, callus; or from flat feet, overworked muscles, deformans coxae, and spondylitis. He emphasized the relation of lumbago to "sciatica." Hertzler defined "sciatica" as a painful affection of the sciatic nerve. He reported fair success resulting from intra and perineural injections of 15-20 cc. of a one per cent solution of quinine and urea. Marbury stated that Cathelin and Sicard introduced epidural injections of cocaine and saline as treatment for sciatica as early as 1901. He used epidural injection of novocaine and saline which benefitted 65 per cent of his patients. Vener reported good results by the use of epidural injections on patients who were suffering with intractible sciatica. He thought that "idiopathic sciatica" probably resulted from an inflammatory condition of the structures within the intervertebral foramina, including the nerve roots. He thought that epidural injections had their value in relieving congestion in these regions.

When a patient presents himself with the symptom of pain along the distribution of the sciatic nerve, the surgeon must first consider the etiology. In an industrial community the diagnosis is frequently very simple as the patient often gives a history of backstrain, lumbago, exposure, or of previous attacks. However, roentgenologic studies of the lumbar spine and pelvis should be made to exclude bony or joint conditions that could cause pressure on the nerve or transferred pain resulting from ligamentous or muscular strain. If the distribution of pain along the sciatic nerve is bilateral, a cord tumor or a lesion within the bony canal must be excluded. To exclude such a condition requires a neurological examination, spinal puncture, and perhaps roentgenologic studies. Sometimes it is necessary to inject lipiodol into the cisterna magna while the patient remains in an upright position and to carry out studies under the fluoroscope. The lipiodal gravitates downward and thus if a block exists, it can be visualized. If a patient shows the loss of the Achilles reflex, muscular atrophy, and anesthesia on the dorsum of the foot, the diagnosis of a sciatic neuritis can be made and an epidural injection promises no relief.

In an industrial community one will discover that the greater number of patients show nothing objectively to account for the distribution of pain and, therefore, this group represents individuals suitable for epidural injection. As a rule, the more acute the condition is, the better is the chance for relief by this type of treatment.

Technic for Epidural Injection. — One places the patient on his abdomen and elevates the buttocks by placing pillows beneath the pubis. The sacral hiatus is discovered at the junction of the sacrum and coccyx and a wheal is made in the skin just overlaying it with one per cent novocain. About 5 cc. of this novocain solution are injected about the hiatus. Then a sacral needle is inserted into the sacral canal for a distance of 6 cms.; 5 per cent novocain solution is injected just ahead of the needle during the introduction. Aspiration is attempted at various levels to be sure that the needle has not entered a blood vessel or the subarachnoid space. Then, 30 cc. of one-half per cent novocain is rapidly introduced. There is then an exacerbation of the old symptoms if the procedure will produce any curative results. The needle is withdrawn and the patient is allowed to leave after lying on the table for thirty minutes. The first treatment will always give much relief if any results are to be expected. If it fails to give any relief, the procedure should not be repeated. The maximum benefit can usually be obtained by three injections administered at intervals of five days. This therapy should be supported by physiotherapy, rest, and a removal of foci of infection, if possible. However, my fellow surgeons realize what a difficult task it is to deal with foci of infection in miners.

In my experience, pain along the distribution of the sciatic nerve constitutes a most common complaint in industrial communities. Epidural injection has in my experience given the best results in the symptomatic group of any therapy yet practiced, which results appear to be as permanent as a spontaneous cure. The removal of foci of infection and the employment of physiotherapy are valuable adjuncts and should be carried out if possible.

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THE IMPORTANCE OF ORAL HYGIENE IN THE HOSPITAL *

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THE HOSPITAL may be said to be a highly specialized institution in which the physician and surgeon direct the medical treatment of the patient. The proper care of the teeth and mouth, as well as their preservation, is what we feel constitutes the field of oral hygiene. There is no doubt that, since Hunter of England pointed out the vital and essential part oral sepsis plays as a causative factor in systemic disease, the medical profession has gradually given this subject its rightful recognition, not only within its professional ranks but also in practically all the Class A hospitals throughout the country. Observation has proven that oral sepsis may exist in any one of its many phases and if elimination is indicated, it does follow that the hospital should be equipped with an efficient oral hygiene personnel and the necessary armamentarium to carry out this vital phase of medical treatment. The object of this short paper is to call your attention to the importance of oral hygiene in the hospital and in addition, to outline a plan which may be utilized in the organization of this type of a service in any of the hospitals which you may represent. The speaker having had personal contact in the development of the Sara Whitaker Glass Dental Clinic of the Ohio Valley General Hospital and the Hullihen Oral Clinic of the Wheeling Hospital (sponsored by the Associated Charities of this city) offers the following brief outline, which should be of some practical value to any hospital board contemplating the addition of an oral hygiene service.

The oral service may consist of staff members who are practitioners of dentistry in good ethical standing. If any elected specialize in their private practices then their specialty may help to classify the staff members. In the two hospitals in Wheeling, an oral surgical service as well as a dental service receives recognition and the members of the staff (dentists) are classified as such. The former receives cases with cleft palates, fractures of the jaw, and impacted teeth, while the latter are available for consultations and to do any reparative work that may come up. In both these hospitals a modern up-to-date equipped oral and dental clinic is in operation. This is available for two general purposes; first,

* Read before the Hospital Association of West Virginia, September 1, 1932, at Elkins.

for the use of private and ward patients in rendering any type of dental work indicated for the patients. No fee is exacted for the use of this room, although nitrous-oxide and oxygen, or any other materials used, are charged at the regular rates of the hospital. A consultation form is available on the floors so that a word picture may be made for the permanment (Fig.) record on the patient's chart, as well as being of value to the physician in charge of the case, who has requested an opinion of the mouth condition. Secondly, the Out Patient Oral and Dental Clinic operates twice each week for a period of two hours each. These sessions are for the benefit of the indigent case and serve to coöperate with the other fields represented in the Out Patient Department. An effort has been made to make these self-sustaining clinics and at least offset the cost of some materials. A social investigation is made of all cases seeking treatment and in this manner we try not to create any hardship on anyone presenting themselves for mouth care. A regular form history card is used for all patients and this record of diagnosis (Fig.) and treatment is kept and filed by the hospital. In these clinics the work done is limited to the elimination of painful and infected teeth. The cost of the materials for the reparative work would be too great to warrant instituting this additional service, besides we do not feel that such work is indicated out of the private office, at least only in the exceptional case and then it is handled accordingly.

The value of this service to the student nurse may be summed up as:

1. Each nurse receives an oral examination as part of her entrance requirements and is advised as to any necessary treatment.

2. Lectures, by one of the oral staff members, covering the subjects of anatomy, pathology, preventive methods and history of the oral cavity should be given the nurse. An effort should be made to make these lectures interesting and practical as well as applicable to her work as a student nurse or to her after she enters upon her duties as a graduate nurse whether it be in public health, public school, or private duty. Besides this, she spends approximately six weeks assisting in the oral and dental out-patient clinic. Oral surgical cases require tedious nursing care and every graduate nurse should have some experience with them before she leaves the training period.

In any medical practice the physician obviously has considerable use for the oral and dental consultant whether it be for his private cases or those he is called upon to treat while on a house service of his respective field. The oral hygiene service is of marked benefit in those particular bone, heart, or accident cases. In that case in which cultures are desired the environment is ideal for the consummation of this work. Close association enables the dentist and physician to speak a common language, which is mutually beneficial.

From the patient's standpoint it is of no less importance, for it enables him to receive efficient oral and dental services while he is a patient or during the period he is convalescing. He may have his own dentist come in and do the work for him if he should so desire. Then, too, the importance of his mouth condition is brought to his attention for correction without the least possible delay. In the past, the medical interne has not had much training relative to the oral and dental surgical work and so this service may give him a unique opportunity not only to observe but to get direct training, which might aid him later if he should enter upon a practice in which he would be called upon to eliminate a toothache, stop the hemorrhage from a tooth socket, treat the fractured jaw, etc.

In the monthly medical staff meetings the members of the oral and dental staff should be governed and accepted on the same basis as other members of the medical staff. They should be expected to take part in the discussions and from time to time present cases that are of general interest. Recognition of this field will add another link in the chain of efficient service rendered to the cause of human sickness. The elimination of oral sepsis in all house cases might have a definite bear-

ing on the length of their stay, it might even be the direct means of quicker evacuation of this costly patient. Out of this attention to oral hygiene will come a certain reward whether it be in the form of new patients, reduced overhead, or increased efficiency of the service rendered.

Two incidents relative to this subject seem to stand out at this time:

1. That Dr. Newquist, a representative of the American College of Surgeons, is conducting a survey of the hospitals throughout our state during next month. It will be of interest to note whether oral hygiene holds a significant place in our hospitals. The results of this survey will enable the State Dental Society to profit from the data collected by him relative to this subject.

2. At the last meeting of the West Virginia State Dental Society it was voted to make a strong effort to get oral hygiene recognized in a manner which will benefit the professions at large and not any one individual or group of members. Our program for this year is to get hospital recognition as well as to get each component society of the state organization to make some definite oral hygiene objective and set out to obtain it. It has been a pleasure, indeed, to come before your association as it makes one feel the better for having had the contact of its officers and members.

SOME PHASES OF CONTRACT PRACTICE *

AN OUTLINE OF SOME IMPORTANT QUESTIONS WHICH DESERVE IMMEDIATE CONSIDERATION

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It is undeniable that the medical profession is now profoundly affected by general economic conditions over which it can exercise little, if any, control. However, certain tendencies in medical practice deserve serious consideration at this time if the medical profession is to preserve that type of administration of medical care which has for centuries been governed by the best interests of both the public and the physician.

Unlike commerce, business and industry, which have developed large organizations, combinations and selling agencies for mass production and marketing, the practice of medicine has always been individualistic and has never recognized any need for intermediate agents through which to bring together the patient and the physician.

Although the profession, as a whole, has steadfastly held to the principle of free choice of individual physician as essential to the best interests of both the public and the physician, numerous types of medical practice have been recently developed to defeat this principle.

These newer types of medical practice not only limit free choice of physician but also create groups, cliques and dangerous dissensions within medical organizations. Contract bargaining, solicitation, misrepresentation and underbidding have resulted in unfair competition among the physicians in some sections. Moreover, some of these schemes have been organized and are being operated in direct opposition to and defiance of the established principles of ethics of the American Medical Association.

Although there is little or no evidence to indicate that the majority of the members of the profession are in accord with these newer schemes for administering medical care, state and county medical societies have, for the most part, made little progress in checking or modifying these dangerous tendencies.

The Judicial Council has made some careful analyses of contract practice and other types of medical practice inimical to both

* From the Bulletin of the American Medical Association.

medical practice and organization. It seems, however, that the present general situation in medicine requires a more detailed pronouncement on matters of medical economics than can be found, at present, in either the Principles of Medical Ethics or the proceedings of the Judicial Council.

As a preface to a discussion of these current dangerous tendencies, a description of several types of medical practice, which are for the most part strikingly opposed to the individual independent practice of medicine, is given below.

DESCRIPTION AND ANALYSIS OF CERTAIN TYPES OF CONTRACT AND INSURANCE PLANS:

1. *Mutual Benevolent Hospital Associations.*—The Mutual Benevolent Hospital Association represents one of the earliest types of contract practice, having originated in 1851 in California. This type of organization was philanthropic in character, had liberal endowments and extensive hospital properties. The hospital staffs were composed of high grade, reputable physicians, and the entire organization was maintained for the membership only. In a recent report to the California Medical Association, it was stated that one of the largest of these associations furnished hospital care of high quality to its members at a nominal cost of $22.61 annually. However, this amount took no account of the income from endowments, did not cover medical fees and overlooked the fact that the profits from pay patients were used to defray the hospital overhead expenses.

Criticism.—Such organizations offer free choice of physician only to the extent of the number which comprises the hospital staff; the majority of the profession is excluded from participation in the plan; the rates charged the members for medical and hospital care have been shown to be inadequate, and the plan is open only to specified groups of the population.

2. *Workmen's Compensation.*—Because workmen's compensation is itself in the nature of a compulsory health insurance scheme limited to accidents and sometimes to diseases incurred in the course of employment, it has become the natural nucleus around which have formed an almost endless variety of contract schemes.

When it is remembered that present compensation laws cover approximately 20,000,000 employees, it will be seen that methods of medical practice are greatly affected by the operations of these systems.

In some states like Washington and Oregon, and to a lesser extent in New Mexico, Idaho, Colorado, Montana, Arizona, and Nevada, where the compensation laws specifically provide for some sort of contract practice which has, in the first two states mentioned, extended far beyond compensation work, it is evident that the practice of medicine in these states may come to be largely dominated by such contracts. In Oregon, the state fund which carries about 90 per cent of the compensation insurance, now enters into such contracts directly. As a result, the annoying and undesirable features of contract practice have become intensified by the state entering the field as a competitive agent.

Quoting from the statement of H. J. Davidson, chairman of the Committee on Public and Industrial Relations of the King County Medical Society (Washington), contract physicians

> hire laymen to solicit the contracts, therefore diverting a considerable portion of the fund to channels of commercialism and, as a corollary to the medical aid law contracts, contract doctors are carrying on a wild cat health insurance business. They are known to have paid up to 20 per cent of the gross revenue derived from the contract and up to $600 a month to lay agents, through whom the contracts were secured. Through the use of hired lay agents they secure contracts remote from their home towns, then sublet to local doctors for 25 per cent of the total revenue, their sole service being to secure and to sublet the contract, or they hire the cheapest available doctor to render service under the remote contracts and often require him to pay them 50 per cent of the gross revenue derived from all private practice developed while in their employ.

Most of these compensation laws with direct contract provisions provide that an employer may levy an assessment on his em-

ployees for medical services, varying from less than $1 per month to about 20 cents per day. Similar conditions have grown up and have been complained of by organized medicine in Alabama, Texas, West Virginia, California, and New York, and in a number of other states. In practically all of these states there is complaint in recent years of an extension of the contract system. All of these schemes have a restricted choice of physicians and in nearly all there are continuous complaints as to the character of the work done and of unfair competition of contract physicians and physicians outside of the scheme.

The compensation law has also had a great share in developing plant medical systems which usually begin with the care of accidents within the plant but which rapidly expand to continuous care during the time of the accident and then to the general health care of the employee and in many cases to complete health care of the families of the employees. It is this tendency to continuous, and in recent years, very rapid, expansion of contract practice which makes this tendency in medical practice significant.

Criticism.—It is this fact, that the situation in the state of Washington is apparently but an advanced stage of development which is occurring in many other states, that makes it worthy of further emphasis. The conditions under which medical insurance is extended to noncompensation disabilities is thus described in the report previously quoted:

> The groups of workmen included under the medical aid law contracts comprise convenient groups to bring into the wildcat health insurance activities. For from seventy-five cents to one dollar and fifty cents a month contract doctors agree to render all professional services and pay all costs incident to the care of accidents not included under the medical aid law and all sickness with specific limited exceptions. This contract is a limited health and accident insurance policy with all the evil possibilities of wildcat insurance, to-wit:
>
> 1. The contract doctor is the insurer.
>
> 2. The insurer is unsupervised as to financial resources, and as to performance under his contract.
>
> 3. He determines the rates, administers the insurance fund, determines what services shall be rendered, renders that service personally or through agents in his hire, and retains the unexpended portion.

So far from the state compensation authorities seeking to check this tendency, they are urging its extension. In a special circular sent to employees it is stated that "a group sickness and non-occupational accident policy should be carried." The reason given for this is that it will reduce the amount of compensation by inducing the employee to trust to his general sickness insurance rather than to the compensational system.

While the defects of contract systems in connection with compensation vary as widely as their diverse character, they may be summarized as follows: (1) they afford no choice of physician; (2) they maintain no personal relations between patient and physician; (3) financial considerations constantly influence treatment; (4) organized medicine has no voice in controlling such practices; (5) outside physician sare subjected to unfair competition, and (6) professional reputation is not earned through open and free competition in service.

3. *Hospital Associations.*—Hospital associations are misnamed. In most instances they are merely the business offices of groups having medical contracts for sale. These "associations" usually have a few "staff physicians" on salary, but most of the physicians who care for the contract cases are paid on a "picee work" basis. Not infrequently, these physicians have no little difficulty in securing payment for services rendered at the amount allowed by some lay business manager whose business it is to deal with the profession as well as with the employers and the employees. It is not uncommon for these czaristic adjusters to dictate to physicians the extent to which their services shall go in an individual case.

Criticism.—Hospital associations have embodied in their schemes the objectionable features of solicitation, underbidding, misrepresentation and inadequate fees to physicians. Medical and hospital services are in many instances inferior to those found in individual

independent practice. The rates charged are inadequate, and there appears to be frequent if not general disregard for professional ethics. There is no free choice of physician.

4. *Contract Practice of Individuals and Groups.*—Individual physicians and medical groups have endeavored to compete with hospital associations and with each other on terms similar to those just described for hospital associations. All the disadvantages and undesirable features found in the operation of hospital associations can be found in most of the individual and group contract practices.

5. *County Contracts for Care of the Indigent Sick.*—This plan originated in Iowa and has been adopted by county medical societies in a number of other states. The essential feature of the plan is a contract made by the county medical societies with the county officials responsible for the care of the indigent sick. The contract usually covers the inmates of county charitable and penal institutions and accepts as a standard of indigency outside such institutions that the patient is in receipt of poor relief.

In the beginning the societies incorporated, but on legal advice it was later decided, because of court decisions pertaining to the practice of medicine by corporations, that incorporation is inadvisable and that a contract can be made "not by the society but severally by individual physicians." There is free choice of physician.

While drugs and minor medical supplies are provided for in the contract, exceptional appliances—sera, antitoxins, etc.—are usually exempt and must be paid for in addition by the county.

Some contracts provide that the members of the society shall act as expert witnesses for the county attorney in any criminal investigation, usually with the provision that "any physician so testifying shall be entitled to collect and receive the witness fees provided by law."

Since the sums received are usually comparatively small in proportion to the membership of the society they are usually applied to membership dues and other society expenses. In a few cases there is a clause providing for other division of sums received by the society under such contracts according to any plan that may be decided on by the society.

Criticism.—This plan has some features that may deserve wider application. At present its limitations to the care of indigents so restricts its operation as to cause it to have little bearing on wider medical problems. It does, of course, provide for complete control of medical care for indigents by organized medicine and proves that it is possible for county medical societies to become an active force, within this limited field, at least, in the solution of medical problems.

6. *Contract Practice by County Medical Societies.*—In an effort to meet the growing competition of hospital associations, contract individuals and medical groups, several county medical societies have devised plans to take contracts as units of organized medicine. These societies were motivated by the desire to furnish to the low income group a medical service at a small cost, to render the same quality of service as that given to regular fee patients, to offer free choice of physician and to eliminate unfair competition among the physicians in the community.

Criticism.—It was found impossible in several instances to enlist the support of the entire county medical society membership in this project. In attempting to solve the problem, at least one county society was drawn into using some of the same methods of contract getting used by other contract groups, viz., the business manager or solicitor. The county societies have with difficulty, at times, prevented a serious division of its membership over the principles involved in contract work.

7. *Dr. Walter B. Coffey, State Medical Society Plan.*—In September, 1929, Dr. Walter B. Coffey of San Francisco outlined to the California Medical Association council a plan for medical service to wage earners with incomes less than $2,500 per annum.

This plan proposed to set up within the California Medical Association a non-profit corporation, to be known as Associated Members, from the membership of the state medi-

cal association. The plan of organization was somewhat complicated and provided, among other things, that a stock certificate of membership be issued to each associate member after payment had been made at an unstated par value.

Rates for services to beneficiaries of the plan varied from $1 per month for those earning less than $1,200 per year, to $2.50 per month for single persons earning more than $1,800 and less than $2,500 per year.

Pronouncements were made against salesmanship, soliciting and advertising, and provision was made for the directors to recall certificates of memberships issued to associate members found guilty of unethical conduct or infraction of the corporation rules.

Criticism.—One of the chief objections to such a plan is that it sets up within already existing and recognized medical organizations a select, limited and presumably privileged group, and thereby almost surely creates a division of opinion, standing and loyalty to accepted principles of ethics. The strength and influence of the American Medical Association is not likely to be increased by a multiplicity of new medical organizations created within its membership, especially when such organizations are at least partially commercial in nature. Unless all members of the state association should become associate members, unfair competition would arise between members of the same medical society. Freedom of choice of physician becomes misleading, if not fraudulent misrepresentation, when the patient is not given a choice from among all the physicians.

8. *Los Angeles Record Health Service.*—This is an example of a commercial journalistic and advertising agency attempting to enter the practice of medicine. The newspaper made arrangements for medical care, of those who elect the offer, with previously existing contract groups. The main function of the newspaper was to advertise the medical service as a part of a subscription campaign.

The scheme was open only to subscribers of the paper. The service was of two types, the first requiring only an annual subscription to the paper and a registration fee of $1. The service was then supposed to be given "by competent physicians, surgeons and specialists —at a fixed scale of fees arranged and approved by the Los Angeles Record Health Service League. These fees are approximately one-half of the fees regularly paid by the suffering public." Service No. 2 was "a complete medical service at low cost. For $1.35 paid monthly in advance to the Pacific Life Extension and Hospital Service System, registered Los Angeles Record Subscribers are assured Medical, Surgical and Hospital care for ailments and accidents without further charge."

Criticism.—Naturally there are a number of restrictions on the character of the service which are usually not noticed by the subscriber, and it is clearly evident that such a service can not combine proper medical care with adequate payment to the physicians. Some of the more obvious additional objections are:

(*a*) Sensational and misleading advertising.

(*b*) Lack of clear understanding on the part of the insured as to the extent of the medical service to which he is entitled.

(*c*) No professional control whatever.

(*d*) Unfair competition with outside physicians.

(*e*) The lowering of all standards of medical ethics showing that development of mass medical care on the insurance principle, unrestricted by professional control, inevitably results in continuous and fairly rapid degeneration of all its features.

(*f*) The newspaper undertook to select and endorse a group of physicians in the community not all of whom are necessarily members of the county medical society.

9. *Baylor University Hospital Insurance Plan.*—The Baylor University hospital plan may be taken as an example of another type of hospital association with the benefits limited to hospital service. This plan provides for a monthly fee of $0.75, which covers hospital, operating room, anesthetic,

laboratory fees, floor nursing, ordinary medicine and dressing over a period of twenty-one days per year, and a 50 per cent discount on x-ray work, but does not include the physician's fees. Tuberculosis, chronic mental, venereal and contagious diseases are exempted.

The members must be gainfully employed. The scheme was first applied to teachers in Dallas County, Texas, of whom there were about 1,500. It was claimed that this was not profitable because many of the teachers, finding themselves exhausted at the end of the term, used the hospital as a convalescent home as well as for the care of any disease that might have developed during the year.

When the plan was later extended to industrial and office groups it yielded an approximate profit of $14,000 per year. The superintendent of the hospital has charge of the soliciting but no definite information is available as to the methods used.

Elizabeth, N. J., is now considering the adoption of the Baylor University plan to cover at least three hospitals. Similar plans are in operation with slight variations throughout the country.

Criticism.—The merits of such a plan are:

(*a*) It is confined to hospital care which is more subject to actuarial calculations than general sickness.

(b) It affords a steady support to hospitals, something that in time of depression has a very strong appeal.

(*c*) If hospital standards are maintained, a fairly high grade of care is assured.

Its defects are:

(*a*) If such hospitals are "closed" it creates a division within the profession.

(*b*) There is no provision for control by county medical societies, as a whole.

(*c*) It tends to extend hospital care beyond its natural scope. Patients who would ordinarily be cared for by the family physician at home, under such a scheme will almost certainly be urged to go to the hospital.

10. *Proposed Texas Medical Association Contract Organization.*—Late in 1929, tentative plans were prepared for the creation of a medical association in Texas, to provide medical services required by carriers under the workmen's compensation act.

It was planned that a body composed of the most honored and respected physicians in the state should apply for the charter of an association formed primarily to guarantee adequate medical service to corporations, to the state or to society when and where it is practicable or impossible to secure, by individual contracts with physicians, coöperative and responsible service. The association was to be empowered to charge for its services and to possess property; to publish a monthly medical magazine devoted to industrial surgery as a scientific study and to industry as it is mutually related to law, medicine and industrial medical organization. It was to be empowered to rent, to build and to conduct a scientific industrial laboratory and to rent or build a hospital ward in which the scientific treatment and study of industrial diseases and injuries could be carried on. It was to have the power to establish, either separately or in association with medical colleges, a course of medical instruction in laboratory, or practical, industrial medicine and surgery.

The immediate purpose of the association was to offer its services to carriers to take over their entire medical problem. It was to offer carriers the opportunity to make a single binding contract for medical service throughout the state to replace the present method of making individual contracts for service with thousands of physicians, none of whom are bound and none of whom can be held responsible and accountable.

This plan embodies all the undesirable features of a commercial medical association superimposed on the already existing and recognized medical societies as was provided for in the Dr. Walter B. Coffey suggestion (section No. 7) and is subject to the same criticism.

(Continued in the March Issue)

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

Poverty and tuberculosis go hand in hand; so runs the doctrine preached for a score of years. Some even regard the tuberculosis death rate as a rough barometer reflecting the fluctuations in the economic state of the people. For more than three years hard times have blighted the country; few have escaped its evil effects. Yet the tuberculosis mortality rate continues to decline. How can this paradox be explained? No authoritative answer is available and none would be so rash as to predict a continuation of the downward trend. But a consideration of some of the influences that undoubtedly play a part in this phenomenon may suggest what steps in the future must be taken to sustain the present favorable trend.

EFFECT OF DEPRESSION ON TUBERCULOSIS

The tuberculosis death rate for 1930 in the United States reached the low point of 71.5 per hundred thousand population. Unofficial but reliable estimates for 1931 show a rate of approximately 67 per hundred thousand. The Metropolitan Life Insurance Company calculated that at the end of the third quarter of 1932, the tuberculosis death rate had declined 6.9 per cent as compared with the like period of 1931.

Deaths from tuberculosis come mostly from that group who have had the disease for some time. Among the tuberculous population at any given time there are always some whose fate hangs precariously in the balance. A slight downward push on the scale such as hunger or worry, is likely to bring the struggle to a premature end. Apparently there are not enough such "critical" cases of tuberculosis among the "new-poor" to affect appreciably the mortality rate.

We are not certain, however, that times are not increasing the morbidity of the disease. Assuming the average expectancy of the consumptive to be five years, the present effects of deprivation, even though temporary, may shorten that expectancy. Furthermore, our present understanding of the manner in which tuberculosis begins and develops, justifies us in assuming that environment influences often determine whether or not a child with early lesions will later develop the destructive adult type. And many children now heavily infected but not yet labeled "tuberculous" are suffering deprivation. Thus the toll of the enemy may be so "absorbed" in the years to come as to show no definite "hump" in the mortality curve.

Aside from these probabilities why has the mortality rate not yet reflected the effect of poverty? While poverty and tuberculosis are closely related, there is nothing about poverty *of itself* that favors the disease. The sole, direct cause of tuberculosis is the tubercle bacillus. Without infection by that specific germ, even Job's turkey could not possibly develop phthisis. But the *by-products* of poverty are the active allies of the enemy.

One such by-product is faulty nutrition. We have not thus far permitted this by-product to overwhelm us. Luxuries, comforts, and even self-respect may have to be sacrificed by many people, but old-fashioned starvation for the sheer want of bread is a disgrace we are determined not to suffer. Nor is the nutritional quality of food being sacrificed to any great extent. During the war, the hunger of European peoples was appeased by filling their bellies with food substitutes of poor nutritional value. Not so in the present crisis. True, the consumption of milk has decreased somewhat, but on the other hand, the cheap price of butter has enlarged sales of that article at the expense of butter substitutes. Meats, vegetables, and fruits have dropped to a price level that discourages the competition of foods of lesser nutritional value. Allowing for the concessions many families are making, we still may safely assume that no widespread harm has as yet been wrought because of poor nutrition.

Another by-product of poverty is the crowding together of families, which in turn favors the ready transfer of the tubercle bacillus from the sick to the well. Domiciliary crowding has not yet been severe. The inhuman huddling of several families in quarters designed for one, as was so common during the war, has been mitigated by lowered rentals. Incidentally, the experience in German cities in the post-war period indicates that food shortage rather than crowding is the significant factor in causing an increase of the rate. During the blockade when food supplies were cut off, the

tuberculosis death rate rose to unprecedented heights. When the blockade was lifted this rate declined precipitately to its former level, though the housing shortage continued as before.

A third by-product of poverty is shattered family morale. "What's the use!" is the attitude of the discouraged family. Slovenly habits creep in. Why wash the dishes carefully? Why not spit on the floor? Why keep the appointment with the doctor? Cheerlessness and numbness subtract their toll from one's capital of resistance. Deplorable situations are evident, but in the aggregate we have kept our courage to the sticking point, and the pessimism that now presides in many households has not yet become chronic.

Momentum of the Movement.—An important factor responsible for the continued decline of tuberculosis deaths is the cumulative effect of the tuberculosis movement. For a score of years, educational propaganda has been slackened only slightly by the present pot holes in the highway of progress. Knowledge acquired in the past has not lost its power; our respect for tuberculosis has not lessened; habits and practices acquired in the good days continue to function in the bad.

But perhaps the most pertinent answer to the question as to why the death rate has not taken an upward turn is to be found in the tuberculosis fighting machinery that is now functioning. It is, of course, inadequate, but in no previous depression have we been so well equipped. Some eighty thousand patients are at the moment occupying sanatroium beds, which means not only that eighty thousand persons are being given their chance, but also that as many potential foci of infection are removed from the susceptible community. More thousands, graduates from tuberculosis institutions, are exerting their wholesome influence wherever they may be. The sanatorium is doing "business as usual," in fact, almost 1,000 new beds have been added (in the U. S. A.) during the past year. Nor has there been an appreciable lessening of clinic and medical activities. Greater skill and precision in diagnosis and treatment are practiced by the doctor than ever before. Health department budgets in several places have been curtailed, but without seriously lessening the efficiency of the service rendered. Public health nurses' salaries have suffered reduction but not the quality of their work. Tuberculosis associations have trimmed their sails, but the educational and publicity work goes on unabated. Research has not stopped, and demonstrations gaily carry on.

Control Machinery Works.—The machinery has clicked on despite the depression. The fact that this "variable" has *not* changed (except for the better), whereas the other traditional variable, namely, the economic factor, has changed, and that, in the face of this, the tuberculosis rate has not increased, is indirect but persuasive proof of the efficacy of our present method of attacking tuberculosis.

Epidemiology teaches that human skill apparently avails little during the height of an epidemic. But when the foci of infection begin to decrease in number, organized effort bears fruit and accelerates the decline. When the disease foci are finally reduced to a minimum number, the epidemic is "under control." Has the age-old epidemic of tuberculosis reached the point where the active cases are so few that the disease may be "controlled" regardless of unfavorable circumstances?

Whatever the answer,—the danger of overconfidence must be avoided. Human nature, notoriously fitful and fickle, must be reckoned with. Experience shows that a populace plagued by a disease enemy may be roused to such a pitch as to depress the danger to a vanishing point. When the threat lessens, interest lags, vigilance relaxes, and then the enemy sweeps once more into the unprotected ranks. For this reason the history of small-pox since Jenner's time is one of sporadic recurrences alternating with periods of quiescence, but never of complete conquest.

The anti-tuberculosis crusade spirit of bygone days drew its power chiefly from deep emotion. As the stimulating reminders of the disease have grown fewer, interest has lessened. It is necessary in these days to replace the old fire with a persistence born of intellectual understanding. For this, leadership of the medical profession is essential. The fact that the traditional and powerful contributing causes of tuberclosis may now be, and are presumably being, "neutralized" by medical skill in diagnosis and treatment, is a tribute to scientific medicine and its practitioners.

PRESIDENT'S PAGE

THE care and treatment of the insane is very properly considered an obligation of the state. This obligation should be fulfilled in such a thorough, humane and scientific manner that the relatives of a patient committed to a state institution could have the satisfaction of knowing that all reasonable measures for physical and mental treatment are available to that patient.

Our state provides four hospitals for the care of mental diseases. As custodial institutions they afford quite comfortable and satisfactory accommodations for about 3300 patients. At the present time this capacity is slightly inadequate, but the problem of over-crowding is not serious.

During the past two years there have been several important additions to the physical equipment of these institutions. Provision has been made for x-ray study, clinical laboratory examinations, dental and surgical treatment. As yet these facilities have not been utilized to any great extent.

Physiotherapy, hydrotherapy and occupational therapy have received scant attention. These measures are of such vital importance in the treatment of the mentally ill that they should have a prominent place in any program for improvement.

The relation of mental illness to physical impairments and bodily disease is too well recognized to require comment. For this reason every mental case should have a thorough physical as well as psychiatric examination, not only on admission to an institutions but also at regular intervals thereafter. Systematic and complete records of such examinations should be kept for each patient. The recent survey of the American College of Surgeons indicates that there is a striking paucity of records to show that any such examinations have been carried out in previous years.

So far as this writer is aware there have been only meager efforts to make use of special therapeutic measures which are applicable to certain cases. Without the services of dietitians it is almost impossbile to carry out the Ketogenic routine for epileptics. Malarial therapy or other forms of hyperpyrexia for paresis and intensive antileutic treatment including the Swift-Ellis and other modifications are not generally available.

In order to provide adequate diagnostic and therapeutic attention for our mentally afflicted we must first make available the services of specially trained psychiatrists. It would probably be advantageous to reserve one well equipped and adequately staffed institution as a clearing house for the admission of new patients, and the treatment of those whose examination indicates that they might be benefited by definite therapeutic measures. The other institutions could be utilized for the custody of those cases which offer no prospect of improvement or for whom no special treatment is indicated. The business administration should remain with the Board of Control, where it is now, but the medical supervision of all of the state medical institutions should be vested in a *non-partisan* State Public Health Council.

R. D. MacGregor.

President.

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GOVERNOR CONLEY'S ATTACK

In his message to the 1933 legislature, now in session, Governor Conley had the following to say in regard to the Association's program of medical supervision of the state institutions caring for the sick:

"A few uninformed persons, evidently working in the interests of themselves, are giving out misinformation derogatory to the work being done in the state hospitals, and particularly the four hospitals for the mentally ill. These propagandists little care about the injury they do to the reputation of their state, to the character of the splendid professional men who are superintendents of the institutions and their competent staffs, or the uneasiness and mental agony they cause to the mothers and fathers and other loved ones of the patients in these hospitals. Their criticism applies to the past, not to the present.

"Their conduct indicates that the propagandists are interested only in getting control of these well equipped and up-to-date hospitals belonging to the state, and will be satisfied if they can, by any means, get them placed in their charge. But this group of selfish men have not succeeded under this administration. I have preferred to keep the institutions in the control of more competent men.

"The four hospitals for the treatment and care of patients mentally afflicted have been within the last three years well equipped for treatment of such patients and the latest improved treatments are given and many cures affected. These hospitals are equipped with splendid operating rooms, laboratories, diathermic apparatus and diagnostic and other up-to-date facilities. The superintendents were appointed after careful investigation into their standing in their profession and because of the qualifications for the position for which they were chosen.

"These institutions are not run by laymen, as is claimed, but as a matter of fact, the professional side of the institutions is run by men educated and trained specially in their work and who have had many years experience."

Reviewing this astounding statement by the Governor of our state, we point out the following statements: "But this group of selfish men (meaning the membership of the West Virginia State Medical Association) have not succeeded under this administration." And again, "Their criticism applies to the past, not to the present." And again, "The professional side of the institutions is run by men educated and trained especially in their work and who have had many years experience."

Well, we'll look over our alleged selfishness. That probably comes as a result of our refusal to accept present conditions as they exist now, under Governor Conley's administration. Many other groups have found favor from the Conley régime and we could have found the same favor had we cared to offer praise instead of criticism. And, of course, when Governor Conley states that we have been criticising the past, not the present, he is simply talking to the galleries. We are extremely dissatisfied with present conditions, as well as with past conditions, and that's that.

But when all is said and done, we feel that our Governor has done our Association a real service. We are not accustomed to receiving such attention and recognition from the executive mansion. Hence this tirade, with its resulting publicity, is quite welcome.

For Governor Conley's benefit we will say quite frankly that conditions have improved in all of the insane hospitals under his administration. To be sure the improvement has been slight, but there has been a decided trend toward better care and attention for the state's insane patients. This improvement was not noticeable until the West Virginia Medical Association began to point out the deplorable conditions that existed up until one year ago. We believe that due credit should be given to

Governor Conley and to the State Board of Control for bettering these conditions.

But if Governor Conley thinks we are going to cease our efforts just when something is beginning to be accomplished, he is entirely mistaken. The slight improvement under his administration still leaves much to be desired. We have no hesitancy in criticising existing conditions. We should redouble our efforts to insure continued and *permanent* improvement for the unfortunate patients that we ourselves are forced to place in the care of the state.

MEMBERSHIP AND DUES

At the close of the year 1932, the West Virginia State Medical Association had more members in good standing and fewer delinquent members than at any other time within the past decade. Considering the economic depression, we feel that this record is unusual. It indicates, probably better than anything else, the strength and influence of organized medicine in this state.

Among the county societies with membership 100 per cent in good standing were Barbour - Randolph - Tucker, Doddridge, Grant, Hampshire, Hardy, Mineral, Greenbrier Valley, Marshall, Mingo, Monongalia, Parkersburg Academy, and Summers. Several of the larger societies, such as Raleigh, McDowell, Marion, and Logan, had two or less delinquent members. No society had more than seven delinquent members.

The question is often asked, "Where does our money go. . . How is it used?" Ten dollars of the dues of each member is paid in to the State Association. Of this amount, one dollar goes into the medical defense fund, one dollar into the indigent fund, two dollars for the WEST VIRGINIA MEDICAL JOURNAL, and the balance of six dollars is used for general operating expense of the headquarters office. It goes to pay for salaries, office rent, telephone, library, legislative expense, legal expense, stamps and stationery, and many other miscellaneous items incident to the management of a business office.

During the past five years the Association has been able to set aside approximately $3,000 a year into a reserve fund. Some day this will in all probability be used toward the building of a permanent home for the West Virginia State Medical Association. Most of this cash reserve has been built up through advertising profit of the JOURNAL.

The payment of one dollar into the medical defense fund for the Association is optional with each member. The chief purpose of the defense fund is to provide expert witnesses, and occasionally a portion of the legal fees, in malpractice suits brought against contributors to the fund. As the total income of the defense fund is less than one thousand dollars a year, it readily becomes apparent that regular malpractice protection can not be furnished. Members who desire malpractice protection should not depend upon the Association's defense fund, but should carry commercial insurance.

If the defense fund does not furnish adequate protection to the individual participants, what then is the purpose of having such a fund? This is a very sensible and logical question. The answer is that the fund provides adequate protection for the membership as a whole even though very little protection for the individual. The fund is used to pay for the competent legal talent in cases that involve some point of law of vital interest to the practice of medicine. For example, at the present time this fund is backing a West Virginia case before the supreme court that we hope will enable the state to restrain unlicensed practitioners by injunction.

More and more, the doctors in West Virginia are coming to realize that their small investment in their county and state societies is one of the best investments they have. During this unsettled period the doctors have pulled together in a splendid spirit of coöperation. It is hoped, and believed, that we will continue to stand shoulder to shoulder for all time to come.

COUNTY SOCIETY NEWS

RALEIGH COUNTY

An interesting and instructive meeting of the Raleigh County doctors was held at the Rutherford Sanitarium, Beckley, on the morning and afternoon of January 24, 1933. The morning session was a thoracoplasty operation performed by Dr. R. H. Walker, Charleston, and Dr. A. R. Tieche, Beckley. This was followed by an inspection of the institution, and lunch was served at noon.

Dr. G. H. Barksdale, Charleston, opened the afternoon program at 1 o'clock with a paper on "Pleural Effusions," which was discussed by Dr. Albert Hoge, Bluefield, and Dr. Walter E. Vest, Charleston. This was followed with a paper on "Compensation and Tuberculosis," by Dr. Russel Kessel, Charleston. Dr. Kessel's paper was discussed by Dr. Walker and Dr. Tieche.

Dr. T. R. Boling then gave a paper on "Tuberculosis Laryngitis," which was discussed by Dr. A. H. Grigg, Beckley. The program was concluded by Dr. George F. Grisinger, Superintendent, with a paper on "Collapse Therapy and Recent Advances in Tuberculosis." A general discussion followed.

FAYETTE COUNTY

Dr. William Price Bittinger of Summerlee, former secretary-treasurer of the Fayette County Medical Society, was elected as president for 1933 at the regular monthly meeting held at Oak Hill on the evening of January 10. Dr. F. S. Harkleroad, Harvey, was chosen first vice-president; Dr. E. E. Jones, Mount Hope, second vice-president; and Dr. Gilbert Daniel, Beards Fork, secretary-treasurer. The retiring president was Dr. C. W. Stallard of Montgomery.

The scientific program was presented by Dr. and Mrs. W. V. Wilkerson of Montgomery with a paper on "Typhoid Fever." Mrs. Wilkerson gave the dietary treatment and displayed plates exactly as fed to typhoid patients in hospitals. Dr. Claude Frazier was selected as the speaker for the February meeting.

The January meeting at Oak Hill was an adjourned session of the December meeting, at which time a quorum was not present, due to inclement weather.

PARKERSBURG ACADEMY

The Academy of Medicine of Parkersburg started the new year with a splendid meeting at the Chancellor Hotel on the evening of January 5 with an excellent attendance. A turkey dinner preceded the scientific session.

The Academy was honored by a visit from Dr. D. A. MacGregor, Wheeling, president of the State Association. It was Dr. MacGregor's first official visit after taking over the duties of his office. His subject, "State Medicine," was interesting and timely. He went into this important question from many angles and with a complete knowledge of the subject. Discussions were numerous by members of the Society.

A very interesting surprise awaited the members of the society at the beginning of the dinner. A large number of the members of the Auxiliary marched into the banquet hall and were served along with members of the Academy. They were welcomed by Dr. R. H. Wharton, president of the Academy, and Mrs. S. M. Prunty, Auxiliary president, responded with a very masterful address. The entire meeting was a delightful affair.

John T. Goff, Secretary.

SUMMERS COUNTY

The regular meeting of the Summers County Medical Society was held on January 11 at 2:30 o'clock, P.M., in the parlor of the McCreery Hotel at Hinton. The Society went on record as opposing the continuation of the state miners' hospitals and authorized a statement to that effect.

New officers for 1933 were elected at this meeting. Dr. W. L. VanSant, Hinton, was chosen as president to succeed Dr. J. T. Johnson of Meadow Creek. Dr. A. P. Hudgins, Hinton, was reëlected as secretary-treasurer.

Two new members were voted into the Society at the January 11 meeting. They were Dr. E. N. Pleasants and Dr. F. L. McNeer, both of Hinton.

A. P. Hudgins, Secretary.

CENTRAL WEST VIRGINIA

A fine meeting of the Central West Virginia Medical Society was held in the Rotary Club rooms, Buckhannon, on the evening of November 30, with 35 doctors and guests in attendance. The high school orchestra furnished music during the dinner.

Following the usual order of business, the election of officers for 1933 was held. Dr. J. B. Dodrill

of Webster Springs was elected president to succeed Dr. W. H. McCauley, Sutton. Dr. L. W. Deeds, Buckhannon, was elected vice-president, and Dr. C. C. Carson, Gassaway, was elected secretary-treasurer.

The January 28 meeting of the Society was held at Gassaway with an excellent scientific program and a good attendance. The program was furnished by Dr. G. H. Barksdale, Dr. P. A. Tuckwiller, and Dr. E. B. Henson, all of Charleston.

The papers presented were as follows: Dr. Barksdale, "Treatment of Pleural Effusion"; Dr. Tuckwiller, "Duodenal Ulcer"; Dr. Henson, "Treatment of Some Congenital Defects."

C. C. CARSON, Secretary.

MARSHALL COUNTY

Dr. Oliver Perry Wilson, Moundsville, was reëlected president of the Marshall County Medical Society at its meeting held on the afternoon of January 10 at the Merry Tavern. Other officers, all of whom were reëlected, are Dr. S. F. Yoho, Franks, vice-president, and Dr. J. A. Striebich, Moundsville, secretary-treasurer. Drs. J. C. Peck, C. G. Morgan, and D. B. Ealy compose the board of censors.

Dr. W. C. McCuskey, Wheeling, presented a comprehensive paper on "Diseases of the Kidneys," with lantern slides. His paper was widely discussed by the members present.

A committee was appointed to study and report on the recent report of the Committee on the Costs of Medical Care. The members appointed were Drs. C. G. Morgan, J. A. Striebich, and P. D. Barlow. The entire program at the next meeting of the Society will be devoted to a discussion of this timely subject.

J. A. STRIEBICH, Secretary.

KANAWHA COUNTY

The annual banquet and installation of officers featured the January 10 meeting of the Kanawha Medical Society which was held in the Kanawha Hotel, Charleston. Addresses were made by Dr. W. P. Black, retiring president, and Dr. G. G. Irwin, incoming president of the Society. A talk was also made by Dr. H. L. Robertson, vice-president and program committee chairman.

The principal address of the evening was made by Mr. Lon H. Kelly, Charleston attorney, on the subject, "The Legal Profession Views the Medico." This was greatly enjoyed by all members present.

M. F. PETERSEN, Secretary.

LOGAN COUNTY

The Logan County Medical Society held its regular January meeting on Wednesday evening, January 18, at 8:00 P.M., at the Hatfield-Lawson Hospital, Logan, with twenty members and visitors present.

Dr. B. L. Hume of Mallory, and Dr. J. E. Whitehill of Earling were elected to membership in the Society.

Following the discussion of some business matters, Dr. B. D. Smith of Omar, our new president, gave a brief inaugural address, speaking on some of the problems that are facing the medical profession, after which the following scientific program was rendered:—Dr. Walter N. Rowley of Huntington, addressed the Society on "The Place of Low Cervical Cesarean Section in Pathological Labors," and Dr. John C. Matthews, also of Huntington, addressed the Society on "Fallacies in Urologic Diagnosis."

Doctors J. W. Lyon of Holden, H. C. Jones and Walter E. Brewer of Logan, and Fred E. Brammer of Dehue were some of the Logan county physicians attending the Central Tri-State Medical Society meeting at Huntington, on Thursday, January 19.

FRED E. BRAMMER, Secretary.

MONONGALIA COUNTY

An interesting meeting of the Monongalia County Medical Society was held in the Junior high school library, Morgantown, on the evening of January 3 with a fine attendance. The speaker of the evening was Dr. W. M. Sheppe of Wheeling whose subject was "The Treatment of Diabetes Mellitus," which was widely discussed by the members present. G. R. MAXWELL, Secretary.

OHIO COUNTY

Dr. Frederick M. Allen of New York City was the scientific essayist at the January 6 meeting of the Ohio County Medical Society which was held in the solarium of the Ohio Valley General Hospital. His subject was "The Use of Insulin in the Treatment of Tuberculosis." Discussion was opened by Dr. W. M. Sheppe and Dr. Andrew Wilson, both of Wheeling.

RUSSELL C. BOND, Secretary.

BARBOUR-RANDOLPH-TUCKER

The regular meeting of the Barbour-Randolph-Tucker County Medical Society was held at Elkins on the evening of January 27 at 8 o'clock. Dr. H. H. Bolton, Jr., president, presided. The meeting was devoted chiefly to business matters pending before the society.

RUSSEL S. WOLFE, Secretary.

CABELL COUNTY

The regular meeting of the Cabell County Medical Society was held on Thursday evening, January 12, at the Pritchard Hotel, Huntington. This was an interesting session, devoted mainly to the consideration of matters of business.

W. W. STRANGE, Secretary.

MEETING DATE SET

As announced on the outside front cover of this JOURNAL, the meeting date for the 1933 session of the Association at Charleston will be held on May 22-23-24, 1933, with headquarters at the Daniel Boone Hotel. The scientific assemblies will be held in the Shrine Mosque, directly across the street from the hotel. The date has just been fixed and announced by the Committee on Scientific Work.

The program for the Charleston meeting is already under way and a number of prominent out-of-state essayists have accepted program invitations. Plans are also being made to have a number of scientific exhibits in the convention hall, if this can be arranged.

The original date fixed for the 1933 meeting was May 8, 9 and 10, but this was changed because of a conflict with the American Congress of Physicians and Surgeons in Washington at the same time. It is believed that there will be no conflict of any kind with the later date.

The chief innovation of the 1933 session will be the change in the time for the various sectional meetings. Heretofore the sectional meetings have either been held on the last afternoon or the last morning of the annual meeting. This year the sectional meetings will be held on Monday afternoon, the opening afternoon of the convention, and the convention itself will close with the banquet and ball on Wednesday evening. There will be no Thursday morning session. The Committee feels that this new arrangement will be much more successful, as it will eliminate the sparse attendance that invariably prevails at the Thursday morning meeting.

FROM OTHER JOURNALS

FUTURE HOSPITAL PROGRAM

One of the greatest assets to individual hospitals and to local and state associations is the wisdom and experience of the American Hospital Association. Annually the best minds in the great group of progressive hospital people of the United States and Canada are directed not only to current problems and difficulties, but also to efforts to look into the future and to see what lies ahead for the field.

A future program for the American Hospital Association was presented at the Detroit session, thanks to the thoughtfulness of the president, Paul Fesler, and to his choice of the man to peer into the future, Dr. Goldwater. Incidentally it might be offered as further proof of the fact that even hospital history repeats itself to mention that Dr. Goldwater was given a similar commission 26 years ago. But Dr. Goldwater's program for the development and expansion of the A.H.A. is not visionary, nor impractical. It is based on long experience in hospital administration, in association affairs, and widespread contact with hospitals, and there is every reason to believe that the program can be carried out to the material advantage of the field.

But in the end, who or what is to benefit by such a program? The association and its members, as such, of course, but no less effectively, all progressive hospitals. For the problems and plans relating to the future which the A.H.A. report mentioned and for which it offered various suggestions are not abstract, intangible things, of only academic value and importance. The things spoken of affect every hospital and every hospital executive directly.

Every hospital and every hospital executive, therefore, should consider the things which the A.H.A. suggests as important and necessary to do. Moreover, every hospital and every hospital executive should join in the effort to do these things. In the case of local and state associations, many practical opportunities are offered for carrying out phases of this future program, to the advantage of each and every hospital in the area of the group.

An idea how the suggestions of the A.H.A. can be carried out by a local or state group is shown in the program for the Chicago Hospital Association that now is under consideration. This same program is possible of accomplishment by a number of other local and state groups. Action is necessary, of

course. As Mr. Lutes says, "Realization of our power is one thing; use of it is another."—*Hospital Management*, November, 1932.

THE PANEL SYSTEM

Many of our readers are at a loss to interpret the term "Panel" as applied to medical practice in Great Britain.

Briefly, every qualified practitioner may elect to be put on the medical list, commonly known as "The Panel." At the present time, some 17,000,000 people whose incomes do not exceed 250 pounds (nearly $950) annually, come within the scope of the National Health Insurance Act. The insurance fund is supported as follows: 4/9 by the employer, 3/9 by the insured, and 2/9 by the nation. The workers register with an insurance company and receive identification cards. Such card presented to the physician of the worker's choice places that worker upon the physician's panel. No panel may include over 2,500 insured persons.

At the present time, the doctors are receiving a little over $1.50 per patient annually; the average amounts to $2,232.00 for each panel physician. Half of the country's general practitioners have a panel.

A physician with 2,500 patients in his panel sees forty to fifty daily. Nearly all have some private practice in addition. The panel seems to assist many younger physicians while establishing themselves. Many poor people receive better care than they would without such services available. However, Americans who have studied the situation failed to find any well-informed British physician who feels the plan would be applicable to the United States.—*Colorado Medicine.*

MEDICAL ECONOMICS

In spite of the complaints that the laity express regarding the lack of medical attention for people in rural sections, the average doctor in communities of any size realizes and appreciates fully that he could do more than he is doing, and that the number of doctors is more than adequate for the care of the sick, except possibly in sparsely settled rural districts. In the larger communities the supply is not only adequate, but there is an over abundance of physicians so that competition becomes keen, and certain practices often bordering on the unethical are followed by these doctors not in organized medicine in order that the physician may at least make a living. It is conceded that the medical profession is over crowded in many places, and that there are too many physicians in most communities. However, our situation is not nearly so serious as it is among some of the professions allied to medicine. Witness the large number of nurses that are being turned out everywhere by hospitals throughout the country. Startling revelation of conditions is given by a pamphlet from the American Nurses Association, which shows that in a group of 42 cities the average nurse will have no more than 149 days of employment in the year. In some cities over crowding certainly is giving the nursing leaders great concern. In one state, whereas in 1900 there was one trained nurse for something over every 5,000 population, in 1930 there is one for every 349. The pharmacists are equally over abundant. The Committee on the Costs of Medical Care states that no more than 10,000 pharmacists will be required to fill the 165,000,000 physicians' prescriptions annually compounded, whereas actually there are 115,000 registered pharmacists. Fortunately, the pharmacist is able to relegate the compounding of prescriptions to a minor rôle; most of his time is spent in retailing drugs, toilet articles, and whatever it is that drug stores sell. Only approximately one-quarter of the $715,000,000 spent for medicines in the United States is prescribed by doctors.

All these figures and these data excite apprehension. In the few countries where the medical profession and the allied branches are over crowded the practice of medicine is on an extremely low plane. If the United States continues to send out doctors, pharmacists, and nurses each year by the thousands, the future of the neophyte physician, pharmacist or nurse does not seem particularly bright. — *New Orleans Medical and Surgical Journal.*

VETERAN RELIEF

There has been a decided recent change in the attitude of the public towards the policies of the Veterans' administration. The protest of the medical profession when free hospital care of veterans was extended to non-service connected disabilities, met deaf ears. Now the general policy of handing out not only hospital care but millions of the taxpayers' money to individual citizens simply because they are ex-soldiers, has made such a drain on federal resources that citizens are rightly concerned about the future.

The radio broadcast on October 26, prepared by General Frank T. Hines, Administrator of Veterans' Affairs, brought out some interesting food for thought. The Civil War veterans have cost

the government some seven and a half billions. Already the World War veterans have received some six billions, exclusive of government insurance disbursements and loans on the so-called bonus. Monetary benefits are being paid to nearly one in five of those who served in the World War. General Hines estimates that the next ten years will cost an additional billion dollars "provided further liberalization of our veteran relief laws is not effected." He recommended a revision of the policies of the Veterans' Administration.

Congressional investigation now in progress should bring out the imperative need for such a revision for financial reasons and in justice to all concerned. This revision should not and need not affect compensation to those suffering disability due to service. Non-service expenditures should, however, be discontinued.

The National Economy League is doing much to crystallize public opinion and the League is being backed by the leaders of the medical profession. Now is no time for the profession to compromise with this evil of the extension of the government into the field of private practice which has been such an injustice to the private hospitals, the medical profession and taxpayers.—*Minnesota Medicine.*

GOVERNMENT ENCROACHMENT

For many years we have seen the gradual encroachment of government—national, state, and local—on private enterprise. It seems that throughout the land as soon as a new undertaking of any kind has been initiated by the government those placed in charge immediately begin to make plans for "bigger and better" things. Every bureau, department, branch and twig of government wants more and more for "bigger and better" things. This is the fundamental cause of the sad plight of government today when it finds itself almost hopelessly involved.

Little did President Coolidge visualize the present enormous hospital expansion of the Veterans' Bureau when, in 1926, he suggested that any available unoccupied beds in the then Veterans' hospitals might be used for veterans suffering from certain specified diseases not of service origin. Up to that time it was taken for granted by all that the Veterans' hospitals were solely for those veterans suffering from diseases and injuries acquired in line of duty. Comparatively few beds were available and only a small number of veterans fell in the specified class. But that formed the entering wedge to the vastest hospitalization program the world has ever known. Now all veterans of all wars are entitled to hospitalization and treatment for all diseases and injuries regardless of their origin and regardless of the ability of the patient to pay for such services. This is unequal compensation for the veterans themselves since, in order to receive these benefits, a veteran must be sick enough to reach a Veterans' hospital and not too sick to be moved there. Those living near one of the hospitals recive much greater benefits than those at a distance. The veteran taken so acutely ill that he can not be moved to a Veterans' hospital receives no benefit regardless of how deserving he may be. Furthermore, if all available beds are taken up by veterans able to pay no room is left for poor, deserving veterans unable to pay. Some modification of the present plan will certainly be more equitable and at the same time save an enormous sum of the taxpayers' money.—*Georgia Medical Journal.*

HARMONIOUS COORDINATION

Pleading with the medical profession of British Columbia to present a united front for impending battles and to wield a greater influence in the period of readjustment which will follow the present economic crisis, the editor of the *Vancouver Medical Bulletin* declares:

"Our weakness as a profession has always been a lack of understanding of the most elementary principles of organization: rules are all right for the other fellow, but do not apply to us personally. Till we can see things in a different light to this, medical organization is bound to be weak. Our battles in the past have been lost through a lack of loyalty to each other and to our leaders. Always, just at the critical point in the fight, our enemy has been able to divide us and so conquer us. It was the fault of the rank and file, not only of those who were trying to lead. As individual medical men, we have a right to run our own affairs: as members of an organization our first duty is loyalty to that organization, that is, to each other, and a willingness to submerge our own invidualiy for the common good."

Vital problems which now exist and others which assuredly will arise can not be solved through individual effort on the part of physicians. They must be met by an enlightened profession and one adequately organized. Organization machinery has been established and has functioned effectively with but few exceptions. However, unless the rank and

file of the profession continue to give to organized medicine the support and loyalty which they have given in the past, results will be disappointing and may be disastrous. The great majority of the members of the medical profession individually are in accord on most of the serious problems which confront the profession. To crystalize this unanimity of thought into concerted action sometimes is difficult. However, it has been done in the past and can be in the future, providing each physician realizes that he has a very important part to perform in the program of activities. The responsibility of medical organization—county, state and national—is to inspire and stimulate this interest.—*Ohio State Medical Journal.*

CONTRACT PRACTICE

At the Annual Conference of Secretaries of Constituent State Medical Associations held in Chicago, November 18-19, E. H. Cary, president of the American Medical Association decried the present tendency toward the contract practice of medicine. Dr. Cary was emphatic in his statement that the best medical care has never been achieved under any such system, governmental or otherwise. In summarizing, it will be noted seven questions were presented which the speaker stated "are the background of our distress."

The "Iowa plan of dealing with indigency" is a practice followed by medical societies in Iowa in making a contract with the governing body of the county to render medical service to the indigent for a stated amount. More than 20 Iowa societies had a contract and rendered such service in 1931. Apparently, the plan has been satisfactory to all parties concerned. Funds received may be used to pay dues, the expenses of guest speakers and general operating expenses of the society. If any funds remain at the end of the year, they may be prorated among the members of the society. At least two societies in this state have used such a plan in past years and two other counties at the present time are giving consideration to the plan.

A discussion of the budgeting system was presented in the columns of this *Journal* some months ago. Prior to the time the address was published, one county medical society in this state was giving serious consideration to the adoption of such a system; report has not been received as to the final action. At a recent meeting of the Omaha-Douglas (Nebraska) County Medical Society, a proposed plan of creating a budgeting system for families with incomes of less than $2,700 was rejected.

The majority report of the Committee on the Costs of Medical Care recommends: "the costs of medical care be placed on a group payment basis, through the use of insurance, through the use of taxation, or through the use of both these methods. This is not meant to preclude the continuation of medical service provided on an individual fee basis for those who prefer the present method. Cash benefits, i.e., compensation for wage-loss due to illness, if and when provided, should be separate and distinct from medical services." The minority report, however, contends: "The objections to compulsory health insurance are almost as compelling to this minority group as are those to voluntary insurance. Proof of the evils of the compulsory system is at hand in our own experience in this country with the only compulsory system with which we have yet had to deal, workmen's compensation insurance. Under workmen's compensation, groups are soliciting contracts, often through paid lay promoters; laymen are organizing clinics and hiring doctors to do the work; standards of practice are being lowered; able physicians outside the groups are being pushed to the wall; the patient is forced by his employer to go to a certain clinic, and the physician is largely under the control of the insurance companies. These are not visionary fears of what may happen but a true picture of widespread evils attending insurance practice. No better example should be needed of what must happen to medical care if compulsory insurance is extended to families."

The last pension for a widow of a soldier in the Revolutionary War was paid in 1910. The Congress of 1917 realized the difficulties of the pension system and provided life insurance, a maximum of $10,000, for each service man at a reasonable rate, payments to be deducted from the monthly service pay. Under the terms of the law, the insurance could be continued after the soldier had terminated his army service. In succeeding years legislation was enacted providing: disability compensation; vocational training; adjusted compensation; free hospitalization for all veterans regardless of the origin of the disability; retirement pay for emergency officers and in 1931, the allowance of a fifty per cent loan on the adjusted compensation certificates.

According to the report of the Veterans' Administration for the fiscal year ending June 30,

1931, of the total admissions to veterans' hospitals, 82,850 or 76 per cent were for the treatment of non-service connected disabilities as compared with 13,243, or 17 per cent in 1925, the year following passage of the law providing hospitalization for all veterans. As of March 31, 1931, there were 53 veterans' hospitals in operation with a bed capacity of 25,930. The medical council of the Veterans' Bureau estimated the maximum number of beds required would approximate 130,000 on the basis that veterans of all wars would be given the privilege of free hospitalization. The development of such a plan would require the construction of some 103,000 beds, at an average cost of $5,000 per bed. One of the plans advanced (and approved at the 1931 meeting of the American Medical Association) toward the reduction of governmental expense in connection with the hospitalization of ex-service men was that of H. H. Shoulders. Briefly, the Shoulders' plan was: (1) a weekly cash benefit payable to the veteran during any period of total disability, and (2) the payment of a liberal hospital benefit sufficient to cover the hospital expenses during any period of hospitalization. The hospital benefit is in addition to the cash benefit.

The opinion has long prevailed that the number of new medical graduates each year, is in excess of the demand. There is also the opinion there is an excess of new graduates in law, dentistry and in other professions. Premedical requirements have been increased by many of the medical schools, but if anything, the number of prospective students making application for enrollment is increasing. No solution has yet been offered to meet this problem. The field of immunization and preventive medicine belong to the private practitioner. Yet, it is a well recognized fact in the absence of an epidemic or an organized program, immunziation and vaccination are neglected, almost ignored, by the general public.

It is not believed that organized medicine favors state medicine. Organized medicine is vitally interested n a workable plan that will best safeguard the interests not only of the physician, but also the patient. The county medical society is the most important unit in organizing such a plan.

"The medical profession sees ahead and is deeply interested in preventing any system from being adopted which threatens the steady advancement of scientific knowledge and progressive development in the art of healing. Unfortunately, medical men themselves are not aware of the fact that experience shows that in all countries in which medical practice has become subservient to extraneous control progressive scientific medicine and the best medical care are utterly incompatible under any such system, whether it be governmental or not."—*Journal, Kansas Medical Society.*

NEW RADIO SERIES

On January 8 the House of E. R. Squibb and Sons presented the first of a series of half-hour radio programs in keeping with the traditions of its founder.

This half hour of entertainment is on the air every Sunday over the red network of the National Broadcasting company chain, at 4:30 P.M., New York time. It features Frank Black and his orchestra, the Revelers, and as the high spot a dramatization of gripping moments from the history of medicine.

These presentations of music and interesting dramatic episodes are designed to appeal to almost every type of radio listener. The announcements emphasize that only through a sufficient number of properly trained physicians can a community expect to meet its responsibility for the care and prevention of illness and the protection of health. Impressive reasons are also mentioned as to why the use of the family doctor is a good way to keep down the costs of competent, sympathetic and understanding general medical care.

PHYSICAL EXAMINATION

The successful business man who insists on his machines being regularly inspected and overhauled and thereby evades the possibility of breakdown, needs the same assurance in regard to his own health. "If I Keep My Health," by Dr. W. W. Bauer, director of the Bureau of Health and Public Instruction of the American Medical Association, is the title of a story in *Hygeia*, the Health Magazine, which shows that a periodic health examination is the best kind of life insurance.

SOUTHERN SURGICAL CONGRESS

The Southeastern Surgical Congress has just announced its fourth annual assembly to be held at the Atlanta Biltmore Hotel, Atlanta, Georgia, on March 6-8, 1933. Among the prominent essayists will be Dr. George W. Crile of Cleveland, Dr. W. D. Haggard of Nashville, Dr. Hugh Cabot of Rochester, Minnesota, Dr. Dean Lewis of Baltimore, Dr. Carl A. Hedblom of Chicago, and Dr. Irvin Abell of Louisville.

AMERICAN BOARD OF OBSTETRICS

The American Board of Obstetrics and Gynecology proposes to hold the first of a series of annual dinners for diplomates of the board and their friends on the first day of the scientific session of the American Medical Association meeting in Milwaukee. At this time the successful candidates from the examination of the day before will be introduced in person, one or more addresses will be made by officers of the board and a round table conference and general discussion of the activities of the board will follow.

Diplomates expecting to be in attendance at the scientific session of the American Medical Association are urged to make reservation for this subscription dinner as early as possible through the office of the secretary of this board. Further announcements will be made through the *Journal of the American Medical Association* and the *American Journal of Obstetrics and Gynecology*.

The next written examination and review of case histories will be held in cities throughout this country and Canada, where there are diplomates who may be empowered to conduct the examination, on April 1, 1933.

The next general, clinical examination is to be held in Milwaukee on Tuesday, June 13, 1933, immediately preceding the annual session of the American Medical Association. Reduced railroad rates will apply.

For further information and application blanks, address the Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania.

DISTRIBUTION OF NURSES

An interesting report by the committee on the Grading of Nursing Schools has just been released to the various state and national medical journals under the title, "Nurses Production, Education, Distribution, and Pay." Of particular concern at the present time is a section of the report under the heading, "Too Many Nurses." In 1900 there was less than one graduate nurse in active practice to every 6,000 people. Today there is more than one graduate nurse in active practice to every six hundred people.

The reason for this amazing increase is that, unlike any other professional institutions of which there is a record, hospitals prefer student service to graduate service. More than 25,000 new graduates are turned out each year, says the report.

MONTHLY MORBIDITY REPORT

for DECEMBER, 1932

	Scarlet Fever	Chickenpox	Diphtheria	Typhoid Fever	Tuberculosis (All Forms)	Whooping Cough	Measles	Influenza
Barbour	3	....	4	1	1	6	2	70
Berkeley	2	....	7	....	1	....	....	1558
Boone	7	3	2	....	....	....	43	1600
Braxton	1	....	5	3	....	....	....	23
Brooke	17	....	....	....	....	....	1	....
Cabell	10	1	13	....	....	....	80	249
Calhoun	....	....	1	1	....	....	....	....
Clay	....	....	....	....	....	....	....	60
Doddridge	....	6	....	....	....	....	....	14
Fayette	2	25	3	4	....	....	6	39
Gilmer	4	....	....	....	....	....	....	....
Greenbrier	1	....	1	....	....	....	1	....
Hampshire	4	....	....	....	....	....	....	20
Hancock	3	....	....	....	....	....	....	3
Hardy	....	1	....	....	....	....	....	....
Harrison	18	34	3	....	....	6	4	....
Jefferson	2	5	....	1	....	1	....	22
Kanawha	17	12	5	....	9	1	....	80
Lewis	1	1	4	1	....	....	9	....
Lincoln	1	....	2	1	1	....	4	109
Logan	8	1	2	....	1	....	2	445
Marion	14	16	4	1	2	4	....	82
Marshall	6	6	2	....	2	....	15	....
Mason	21	....	2	....	....	2	....	150
Mercer	16	....	....	2	....	....	4	164
Mineral	48	8	2	....	5	7	12	33
Mingo	1	....	8	....	....	6	....	86
Monongalia	6	7	7	1	....	5	1	210
Monroe	1	....	....	....	....	....	1	154
Morgan	1	....	....	2	....	....	....	....
Nicholas	....	....	2	2	....	....	....	610
Ohio	15	96	....	....	4	40	414	3
Pendleton	1	....	....	....	....	....	....	....
Preston	10	....	....	....	....	....	3	....
Putnam	....	....	1	....	1	....	....	1
Raleigh	9	....	11	2	....	....	....	318
Randolph	7	....	5	....	....	....	....	....
Ritchie	2	....	....	....	....	....	....	25
Summers	....	1	2	....	....	....	8	40
Tucker	4	....	1	....	....	....	....	....
Tyler	4	1	....	....	2	....	1	22
Wayne	1	....	9	....	....	12	7	179
Webster	1	....	....	....	....	....	....	1
Wetzel	....	....	....	....	....	6	4	....
Wood	11	4	7	1	4	....	....	9
Totals	280	228	121	23	33	96	622	6379

The West Virginia Medical Journal

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JAMES R. BLOSS, *Editor-in-Chief* . . . . . Huntington

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THE PRACTICAL VALUE OF SPECIAL DIAGNOSTIC METHODS IN THE STUDY OF DIGESTIVE DISEASES *

By E. B. FREEMAN, M. D.
Baltimore, Md.

THERE is a growing tendency in present-day medicine to over-emphasize laboratory studies and other diagnostic procedures, and to pay too little attention to the clinical history and the physical examination.

Valuable as the special diagnostic procedures are, they can never take the place of a well correlated history and a carefully made physical examination. The history and the physical examination are the foundation upon which all diagnostic methods must rest; the knowledge thus obtained will usually give one a definite idea as to which special diagnostic procedures should be used in completing the diagnosis. No one for a moment doubts the value of special diagnostic methods; and in some cases, the diagnosis must rest upon one or more special procedures. In no branch of internal medicine is this more true than in the study of digestive diseases.

The inaccessibility of most of the digestive apparatus makes special diagnostic prodecures imperative. I like to think of diseases of the digestive tract not as a definite specialty, but merely as a subdivision of internal medicine; and as Dr. Crohn has very aptly stated, "Its excuse for existence lies in the fact that the gastroenterologist as an internist, focuses all of his attention in furthering the accumulation of scientific data and experience relative to the digestive apparatus."

To be a good gastroenterologist, one must have a very wide working knowledge of internal medicine; not for a moment must he lose sight of its relation to internal medicine as a whole. If he does, the early digestive symptoms of such diseases as pulmonary tuberculosis, myocardial insufficiency, coronary thrombosis, Bright's disease, renal calculus, gastric crisis of tabes, and many other general diseases will be misinterpreted. Without the proper knowledge of internal medicine, the early digestive symptoms of many systemic diseases could not be properly correlated. The history of a gastric ulcer or gastric carcinoma may be so indefinite as to suggest nothing more than a functional indigestion, and especially this is true if nothing definite can be made out on physical examination. Yet, if one takes the leads that are given even in an indefinite history, and follows them out with further questioning and study, much valuable information may be discovered that would otherwise be overlooked. Also, the age of the patient, the occupation,

* Read before the West Virginia State Medical Association at Parkersburg, on June 22, 1932.

social surroundings, mental state, and domestic happiness may throw as much or even more light on the diagnosis than a study of the gastric secretion, or any other method of laboratory study. The taking of a careful history in a digestive case frequently brings out the fact that one is not dealing with a digestive condition at all, but with a systemic disease in which the symptoms are referable to the digestive tract only. The history of a duodenal ulcer is usually characteristic, and the diagnosis can be made in most cases from the history alone. What is more characteristic than the ulcer syndrome of pain coming on at a definite time after the intake of food, relieved by eating or by soda, and occurring periodically spring and fall or spring or fall? Certainly, the diagnosis of duodenal ulcer can be made in the majority of cases when this group of symptoms are present. On the other hand, a gastric neurosis, by the mildness of symptoms and the lack of a definite course, speaks just as definitely for a diagnosis of a functional disturbance. The unfortunate thing about the whole problem is that in a certain number of cases of serious organic disease of the digestive tract, the symptoms are so mild that they very closely simulate those of a functional disturbance. It follows, therefore, that in this group of cases special diagnostic procedures are absolutely necessary if one is to arrive at a correct diagnosis.

In lesions of the esophagus, the history and physical examination are of very little value in making an accurate diagnosis. The history does, however, call our attention to the fact that we are dealing with some sort of esophageal disease, while practically nothing of real value can be learned from the physical examination. Here again special diagnostic procedures are necessary if one is to arrive at a correct diagnosis. The special methods that are most helpful are the passage of esophageal bougies, x-ray screen and film studies and esophagoscopy.

The passage of bougies determines whether or not an obstructive lesion is present; it also determines the site of the obstruction and something concerning its nature. Just a note of warning,—"no one should pass an esophageal bougie blindly," due to the fact that not infrequently there is pouching of the esophageal wall just above the obstructive lesion; and if the bougie unfortunately enters one of these pouches, very slight pressure may puncture the wall of the esophagus. This difficulty can be absolutely and easily overcome by passing olive tipped bougies over a previously swallowed thread. Six yards of size D silk thread swallowed the night before will permit enough of the thread to pass through the stomach and become anchored in the small intestine, and when drawn taut serves as a guide over which the bougies may be passed with safety. If this technique is followed, there is absolutely no danger in passing esophageal bougies.

I consider the passage of esophageal bougies over a previously swallowed thread a very much safer procedure than passing bougies through the esophagoscope. While it is true when bougies are passed through the esophagoscope, one is able to see the bougie enter the obstructed area, but can not, however, tell what course it takes after entering; and from that point on, the bougie is passed unguided. When one considers that most esophagoscopes are ten millimeters or less in diameter, it is obvious that when even the smallest bougie is passed through it, there is very little space left through which to obtain a view of the diseased area.

Fluoroscopic and film studies are very helpful in determining the presence of esophageal disease. By this method, the location of the lesion can be accurately determined and a great deal made out concerning its character. If one sets aside accidental lesions such as impacted foreign bodies, and strictures due to the swallowing of corrosive substances, there remain only three diseases of much importance; namely, diverticulum, chronic cardiospasm and carcinoma. While diverticulum and chronic cardiospasm are quite rare, caricnoma of the esophagus is not uncommon and stands relatively high in the distribution of carcinoma throughout the body. The characteristic appearance of chronic

cardiospasm with its diffuse dilatation and its smooth walls tapering to a point at the cardia, can scarcely be confused with any other condition. On the other hand, slight dilatation with marked irregularity in outline speaks just as forcefully for the lesion being carcinoma. In both these conditions, however, the x-ray findings may be misleading, in that carcinoma may be found in the lower end of the esophagus even though the esophageal wall seems to be smooth and regular in outline. Likewise, an irregularity in outline may be found in chronic cardiospasm. These findings are mainly due to one of two conditions, namely: food residue in the lower end of the esophagus, or malignant disease in the cardiac end of the stomach.

The most accurate method, however, of determining the character of a lesion of the esophagus is by an esophagoscopic examination. It is true that this procedure is more difficult and requires some special training to carry out; yet the fact remains that the results of this procedure are by far more accurate. It can be done in any well equipped office or in the out-patient department of any well organized hospital; it does not require hospitalization, and the examination can be made without causing the patient very much discomfort. By this method, one can carefully examine the wall of the esophagus and study any lesion that may be present. If an ulcerative lesion is found, its size, position and location can be accurately determined; and if desired, a specimen may be removed for microscopic study. After all, actually seeing the pathological lesion under consideration, is by far more convincing than any indirect method of procedure can ever hope to be.

While the history and physical examination maintains a preëminent place in the diagnosis of lesions of the stomach and duodenum, there still remains a very denite place for special methods of observation. Certainly, it is desirable to study the secretory changes of the stomach in many digestive conditions; likewise, its size, shape, position, contour and motility.

The secretory changes are studied usually by investigation of the fasting stomach contents and by examination of the contents after a standard test meal. Many observers are satisfied with a study of a single specimen withdrawn 45 minutes to one hour after the test meal has been given; while others prefer a study by the fractional method, when the specimens are removed every 15 minutes for a period of two hours. Sometimes it is deemed necessary to make fractional studies after the administration of histamine.

The whole question of secretory changes has been very much discussed in the past few years. Fifteen years ago, the discussion of the subject would have been very much easier than it is today. Then, one was satisfied to take one acid reading at 45 to 60 minutes after the meal; or to carry on the fractional study with the hope that this method would give more accurate readings. If only one specimen of gastric contents is removed, it necessarily follows that the estimation of the gastric acidity must rest upon one determination.

About the time the fractional study of the gastric secretion was becoming very popular, a group of observers including Gorhman, Wheelan, White and others, showed that there were wide variations in the acid contents obtained at the same time from different portions of the stomach. There should have been nothing new in these findings, as everyone knows that the food and the gastric juice are only completely mixed in the antrum. There are still other factors which interfere with acid readings in the gastric juice, two of which are: the amount of alkaline saliva that may be swallowed, and the regurgitation of alkaline duodenal contents back into the stomach. Moreover, it has been shown in extensive studies of apparently perfectly normal students, that most of the acid curves thought to be characteristic of gastric disease, are most likely normal variations. Therefore, one can not state that a certain type of acid curve is an indication of a certain disease. Before this can be done, one should have at least one study showing the acid curve when the individual

was well. Of course, this can not be obtained, as normal individuals do not come to physicians for these observations.

There has been an enormous amount of work done in the study of gastric acidity both in health and disease. Rehfuss states that there are at least five normal acid curves as brought out by his fractional study of gastric contents. Therefore, for one to evaluate the finding of a certain type of acid curve in studying a digestive case, it must be first determined whether or not the curve is normal for the case under consideration. This, of course, is not easy to do. Carlson has come to the conclusion from his work and that of others that the acid as it comes from the gastric glands is of about constant strength, around .45%; and the high or low acid readings are due to different degrees of dilution, a highly diluted gastric juice giving a low acid reading; while a concentrated gastric juice gives a high acid reading. Carlson also states that an acid secretion of more than .5% has never been recorded. Ivy from his studies has shown that the secretion from the glands in the pyloric region of the stomach are alkaline in reaction.

The withholding of salt in the diet is thought by French observers to aid materially in the control of acid secretion in hyperacidity cases; but this has been proven not to be true, as the stomach continues to furnish an acid juice even during starvation.

The fractional study of gastric secretion is not even a relatively new procedure. It was employed by the French more than thirty years ago. They used a large tube and reintroduced it at regular intervals after the test meal, and obtained in this way small amounts of gastric juice for study. This method of study was dropped at that time as not being very helpful. The method as employed in more recent years, with the small tube, is much more satisfactory and less unpleasant for the patient; and the end results more accurate. Some years ago when Dr. Rehfuss stressed the importance of fractional study of gastric contents, Thomas R. Brown assigned Gaither and Kohn, who were working in his clinic, to run a series of fractional studies. The cases were in no way selected, but taken routinely as they came into the clinic. A study was made in 200 consecutive cases by the fractional method, the contents being withdrawn every fifteen minutes over a period of two hours. In 95% of this series of cases, the high acid reading occurred at 45-60 minutes after the ingestion of the usual test meal of bread and water. When one considers that the acid curve reached its height in 95% of the cases at the time that most test meals are removed for study, it does not seem hardly justifiable to use a time-consuming method when it is of value only in one case out of twenty; and furthermore, in determining a pathological curve one must set aside the five normal curves before it is possible to state that the curve under consideration is pathological. I am frank to say that I do not feel qualified to differentiate between the five normal curves and the pathological curve in a given case; and I have not been doing fractional studies routinely. I do, however, use the method in achlorhydria, when I want to determine whether or not the case is one of a true achlorhydria or one of a delayed acid secretion. In these cases a fractional study done on the fasting stomach after the administration of histamine, is very helpful. With the use of histamine one finds that true achlorhydria is quite rare.

In the study of all the achlorhydrias with histamine that were reported by the routine examination after a test meal of bread and water, I was able to collect only fourteen cases of true achlorhydria in the Digestive Clinic at the Johns Hopkins Hospital in a period of fourteen months. After all, as I see it, the most important findings in the study of gastric acidity are, namely, the complete absence of hydrochloric acid or achlorhydria, and very high acid readings; all the other variations in acid readings are relative and can not be relied upon. Furthermore, the secretory function of the stomach is not nearly so valuable to the clinician as the motor function. As Alonzo Taylor has so well stated, "We have duplicate plants for chemical

digestion, but only one motor path between them; and when that breaks down, we know it."

The study of the ferments is of clinical value in a small group of cases only. If one is trying to make an early diagnosis of carcinoma of the pancreas, the procedure is helpful. The easiest ferment to work with is diastase. There is no difficulty in obtaining sufficient duodenal contents, with the duodenal tube, to make the test. If diastase is found to be absent in the duodenal contents, it points quite definitely to carcinoma of the pancreas; while in chronic pancreatitis, the diastase content is usually diminished but never entirely absent. In a study of diastase content in mouth secretion in 214 gastrointestinal cases, no relation could be established between the amount of diastase found and the gastrointestinal lesion under consideration. These studies included 55 cases of splanchnoptosis with atony, 4 gastric ulcer, 24 duodenal ulcer, 4 gastric carcinoma, 15 chronic cholecystitis, 30 chronic appendicitis, 17 gastric neurosis, 7 lues, 3 ulcerative colitis, 6 upper right quadrant adhesions, 14 achlorhydria, 1 obstructive jaundice, 1 catarrhal jaundice, and 33 cases in which the diagnosis was other than gastrointestinal lesion.

The x-ray method of studying the gastrointestinal tract is a most helpful diagnostic procedure. By this method one can outline the size, shape and position of the stomach, study its muscular tone and determine its motility. Not only may the stomach and duodenum be studied in this manner, but likewise the remainder of the small intestine and the colon.

Early in the x-ray study of the gastrointestinal tract, there was quite a bit of discussion between the advocates of fluoroscopic method of study and those of the serial film method. At the present time, almost all agree that both methods of procedure are to be used if the best results are to be obtained. The fluoroscopic studies should precede the taking of film in all cases. I am well aware that this statement will be challenged by some radiologists, but nevertheless, as a clinician I am convinced that this is the proper procedure.

One of the great advantages in the fluoroscopic study is that instead of seeing a number of snapshots of the stomach as in films, one really obtains a moving-picture of the stomach. One can study the peristaltic activity and the motility of the stomach; and by turning the patient from side to side, study the stomach and duodenum from a number of different angles. The stomach may be palpated and any irregularity in contour can usually be determined; also, by placing the patient in the horizontal position, a good view of the fundus may be obtained—this is not so easily brought out when the patient is in the upright position. When the patient is thin and the history does not point to organic disease of the stomach, and when no signs of disease can be found with the aid of the fluoroscope, it would seem unnecessary to take films, except as they may be desired by the physician or patient as a matter of record. On the other hand, if there is a history suggesting organic disease and the patient is inclined to be stout, films should be taken in sufficient number necessary to throw as much light upon the condition as possible.

In the study of a gastric case, one may form a very clear mental picture from the clinical history and the physical examination as to whether the lesion be peptic ulcer, malignant disease or a functional neurosis; but it is necessary to go further than this. In the case of peptic ulcer, it is essential to determine its location, size and contour; also if it is superficial, or deep and penetrating, or complicated by pyloric obstruction, all of which can usually be revealed by careful x-ray study. If the ulcer is of the deep penetrating type or complicated by pyloric obstruction, surgery is indicated; whereas, if of the superficial type and not complicated by pyloric obstruction, medical treatment should be advised. Likewise, in gastric carcinoma, it is not enough to know that we are dealing with carcinoma; we must know the location of the growth, the amount of stomach involvement, and the degree of pyloric obstruction, so the surgeon will have as much evidence as possible to guide

him in any operative procedure that he may undertake. If the x-ray study shows a small growth or sometimes even a large one in the prepyloric region, it is favorable for surgical attack; whereas, even a small growth located near the cardia offers almost insurmountable surgical difficulties.

Gastroscopy has not so far been of very much value in the diagnosis of the gastric lesions, except in those situated in the cardiac end of the stomach. A lesion in this area can be frequently brought into view. I have been able with the aid of the Jackson gastroscope to locate tumors in this area and remove specimens for microscopic study in six cases; in four of which the specimen removed on microscopic study proved to be carcinoma. These were all doubtful cases in which the clinical history and the x-ray study showed evidence of some obstruction at the cardia. No obstruction was found, however, when the gastroscope was passed. Elsner, Schindler, Jackson and others, have found gastroscopy useful in helping to make the diagnosis in some obscure cases. There are many difficulties yet to be overcome, the most important of which is the inability to visualize the entire stomach wall, for the pyloric region and certain portions of the lesser curvature can not be brought into view, and a good view of these areas is very important when one is trying to exclude an organic lesion of the stomach, because they are frequently the site of organic disease, especially ulcer and carcinoma. Until the time comes when the gastroscope is so perfected that a good view of the entire stomach wall can be obtained, one will meet with many disappointments in attempting its use.

In the diagnosis of gall bladder disease, there are two special diagnostic procedures that have been used very extensively in the past few years, namely: medical drainage of the gall bladder, and x-ray studies. In 1917, Meltzer after much experimental work with magnesium salts, noticed that these salts caused considerable relaxation of smooth musculature when applied directly to the intestinal wall. He further suggested, basing his idea on his knowledge of the law of contrary innervation, that a relaxation of the sphincter of Oddi so produced might reflexly cause contractions of the gall bladder and biliary tract. Lyon was quick to grasp Meltzer's idea, and by using a duodenal tube in situ, injected a strong solution of magnesium sulphate into the duodenum and produced a free flow of bile, and thus was developed another diagnostic and therapeutic procedure. Lyon, by fractional studies of duodenal contents, has classified the bile thus obtained as A, B and C bile. The A bile consists of the first portion collected, and is supposed to be made up of bile coming from the common duct only. B bile is made up of thick, heavy, viscid, dark colored bile, which represents the bile obtained from the gall bladder; while C bile, which is very much thinner, less viscid and lighter in color represents bile coming directly from the bile ducts and liver. The finding in B bile of pus and bacteria, and the cultural growth of pathogenic bacteria from this bile, should indicate gall bladder disease. The finding of a large amount of bile pigment and many cholesterin crystals, points to the probable presence of gall stones. The presence of a large amount of thick, heavy, dark bile indicates gall bladder stasis. The complete absence of B bile suggests blocking of the cystic duct.

The diagnostic value of the Lyon method of study in gall bladder disease has been and still is the subject of considerable controversy. In the hands of Smithies, White, Friedenwald and others, it has been singularly satisfactory; while in the hands of Crohn, Alvarez and Brown, it has been rather disappointing. Basing my opinion on personal observations with the method, I am convinced that we have much better methods of study in gall bladder and biliary tract disease, such as x-ray, blood chemistry, clinical history and physical examination; and in consequence, I have not employed the method to any great extent in the last few years. As a therapeutic measure, I do think the method has a definite place in the treatment of a small group of cases; but the discussion of the method as a

means of treating gall bladder and biliary tract disease does not come within the scope of this paper.

The x-ray study of the gall bladder now holds a very important place in the diagnosis of gall bladder disease. The early attempts to visualize the gall bladder directly were usually disappointing. Of course, if the gall bladder was markedly thickened, the patient thin, and great technical care taken, a good visualization could occasionally be obtained; but on the other hand, if the gall bladder was not so definitely diseased, and the patient rather stout, good visualization could not be obtained. The frequency with which gall stones were visualized by the direct method, depended entirely on the amount of bilirubin calcium contained in the stones. If the bilirubin calcium content was high, the stones were easily visualized.

Clinicians during this period of x-ray study of the gall bladder learned to depend upon certain findings in the gastrointestinal series as an indication of gall bladder disease. If the pyloric-duodenal region was far to the right and high up under the costal margin, with the hepatic flexure of the colon in close proximity to the pylorus and duodenum, it indicated that the gall bladder was diseased. The findings just described are easily brought out if one gives an eighteen-hour contrast meal and another just before the gastrointestinal series are taken. When one checks the evidence of upper right quadrant adhesions by this method against the evidence of gall bladder disease by cholecystography, he probably will be surprised to find that they parallel each other quite closely.

A great advance in the x-ray study of the gall bladder was made when Graham in 1924 discovered that when certain chemicals were injected into the blood stream, they would be secreted in the bile in sufficient quantity to make the x-ray visualization of the normal gall bladder possible. After a great deal of experimental work, the dye finally selected as most satisfactory in every respect was sodium tetraiodophenolphthalein.

Further studies showed that the gall bladder could also be visualized when the dye was given orally. At the present time, both methods of administration are used. The oral method seems to be somewhat more popular; which I think is due, in part, to the fact that it is quite a simple procedure as compared with the intravenous method. Some use the oral method of administration in the thin individuals and the intravenous method in stout ones; still some prefer a combination of the two methods, giving a smaller dose by mouth and likewise a smaller dose intravenously. The method we have used in the past few years has been the administration of the dye orally first; if the gall bladder does not visualize, then repeat the examination by the intravenous method. In making the studies in this way, it is interesting to note the cases that do not visualize by the oral method usually visualize poorly by the intravenous method. No matter which method is used, if the gall bladder visualizes well, is regular in contour and empties promptly, it indicates a normally functioning gall bladder; but if the gall bladder is not visualized, or only faintly so, it indicates that the gall bladder is diseased. The fact that the gall bladder does not visualize on one examination is not sufficient evidence upon which to base a diagnosis; the examination must be repeated, and if the same results are obtained, one is then justified in making a diagnosis of gall bladder disease. Gall stones if present in the visualized gall bladder, may cast positive or negative shadows, the positive shadows being cast by stones rich in bilirubin calcium, the negative ones being cast by stones made up almost entirely of cholesterin.

There has been and still is some controversy concerning the value of x-ray studies in the diagnosis of chronic appendicitis. Even the term "chronic appendicitis" is not accepted by many surgeons; and it may be that the surgical classification of appendicitis as acute and subacute is correct. But the fact remains that there is still a small group of cases with chronic digestive symptoms that have extended over many years, which are due to appendiceal disease. In this group,

which I am willing to admit is small but definite, one finds nothing in the past history to suggest even an acute abdominal condition that could be interpreted as having been due to an attack of acute appendicitis; the only symptoms being those referred to the stomach, such as burning in the epigastric region, abdominal fullness, eructations of gas and sour stomach contents. Likewise, the physical examination is disappointing, there being no muscle spasm and no abdominal tenderness. Yet, in these very cases, if a careful x-ray study is made (fluoroscopic and films), definite evidence of appendiceal disease may be found. It is this group we are justified in classifying as chronic appendicitis. We admit that chronic inflammation does exist in the gall bladder, stomach, pancreas, colon and, in fact, in all of the other abdominal viscera; why not in the appendix? Personally, I believe the diagnosis of chronic appendicitis is justifiable. It is in this group that I wish to discuss the practical value of x-ray studies. These cases should be studied by both the screen and film methods and in both the upright and horizontal positions. Horizontally they should be studied three consecutive days; the contrast meal should be given 18-24 hours before the x-ray study is to be made. This insures a good distribution of the barium throughout the colon. For the study in the upright position, a second dose of barium should be given immediately before the examination is begun. In this position one does not depend upon the visualization of the appendix to make the diagnosis, but upon the position of the stomach and the degree of kinking of the hepatic flexure and the first portion of the transverse colon back against the cecum; and also the manner in which the colon may be separated from the cecum. If definite adhesions are present, one will experience great difficulty in separating the colon from the cecum; conversely, if loose adhesions are present, the colon separates easily.

In most cases of chronic appendicitis the stomach assumes a very characteristic position when the patient is studied in the upright position, the prepyloric region is over to the right and downward, the duodenal cap is frequently close to the lesser curvature pointing upward and to the left. This is most likely due to an omental pull on the stomach resulting from the omentum being involved in the inflammatory process in and around the cecum. When the patient is placed in the horizontal position, there is no longer evidence of omental pull on the stomach, and it assumes its normal position. In the horizontal position, if the appendix is filled, it can be quite easily visualized by gentle manipulation of the cecum, and raising it somewhat out of the iliac fossa. With the appendix thus brought into view, it is an easy matter to determine whether it is freely movable or fixed; whether it is completely or incompletely filled; whether it is beaded, kinked, or straight, smooth and regular; and also whether it is sensitive. By studying the case for three consecutive days, one is able to determine the time required for the appendix to empty. Therefore, if one finds on making an x-ray examination of the gastrointestinal tract in the upright position (having given a contrast meal eighteen hours and one immediately before the examination), the prepyloric region of the stomach to be to the right and downward, the duodenal cap along the lesser curvature pointing to the left, and the colon kinked back against the cecum which separates with difficulty, one is justified in making a diagnosis of chronic appendicitis. Likewise, a similar diagnosis is justified when the study is made in the horizontal position and one finds the appendix kinked, beaded, more or less fixed and still containing barium on the third day.

If one suspects from the clinical history that an organic lesion in the colon is present, such as carcinoma, tuberculosis, colitis or diverticulitis, a careful x-ray study and proctoscopic examination should be made. It is very important to make the fluoroscopic study while the contrast enema is being given. In the horizontal fluoroscopic study one can watch the manner in which the colon fills, and determine whether or not its contour is smooth and regular throughout. As the con-

trast enema flows into the colon, there will be temporary delays in its progress occasionally, due to spasm; but if one is constantly watching, these spasmodic defects will smooth out completely, and finally the entire colon including the cecum will be filled. If on the other hand, some portion remains unfilled, or irregularly filled, or the head of the contrast enema can not be made to pass beyond a certain point, it strongly suggests the presence of an organic lesion. Under such circumstances, the study should be repeated and the findings checked against those of the first examination, to determine whether or not the filling defect is constant. Sometimes considerable information may be obtained by examining the patient after the enema has been expelled and the colon distended with air; also by changing the patient's position on the table and viewing the colon at different angles, filling defects may be brought out that would otherwise be overlooked. It is also very helpful to watch the progress through the colon of a contrast meal given by mouth; sometimes this will show dilatation above the lesion. The data thus obtained will be helpful in arriving at a correct diagnosis.

If one suspects diverticulitis, it is well to study the case for one or more days after the contrast enema has been given, as diverticula may be found on the second or third day which were not demonstrable when the colon was completely filled. The characteristic irregular incomplete filling defect of tuberculosis of the cecum; the obstructive filling defect of malignant disease; the spastic, smoothed-out appearance of colitis; and the finger-like protrusions of diverticulitis can all be made out by careful x-ray study. The filling defect, however, of an early annular carcinoma is most difficult to locate, and not infrequently is overlooked. In addition to the careful fluoroscopic study of the colon, films should be taken to confirm the fluoroscopic findings and to bring out small filling defects that could easily be overlooked by the fluoroscopic method.

No study of the large bowel is complete without a proctoscopic examination. A history which suggests that the large bowel is not functioning normally is ample justification for thorough investigation. Rectal bleeding ever so slight, while usually attributed to bleeding hemorrhoids, may be the only symptom of serious organic disease; and many patients have been operated upon for hemorrhoids because of rectal bleeding, when a more thorough examination, including a proctoscopic study, made later on, proved the bleeding was not due to hemorrhoids, but due to a carcinoma higher up. Likewise, diarrhea may be due to achylia gastrica or associated with some general systemic disease; but it usually indicates a lesion of the large bowel, many times involving the lower sigmoid and rectum. When one realizes that such serious diseases as carcinoma, amebic dysentery and ulcerative colitis may have diarrhea as their presenting symptom only, it at once becomes apparent how very important it is to make a thorough investigation.

While constipation is usually due to an unbalanced diet and a faulty mode of living, yet a progressively increasing constipation is not infrequently the only early symptom of an organic obstruction of the bowel due to carcinoma. Of course, there are other causes of obstruction, some of which are: volvulus, rectal polyp, abdominal adhesions and diverticulosis; but these causes are relatively rare as compared with the frequency of malignant disease. If a patient in middle life or beyond presents symptoms of obstruction of the large bowel, one must consider the obstruction due to malignant disease until it is proven otherwise. The value, therefore, of a proctosigmoidoscopic examination can not be overestimated. It is a comparatively simple procedure. The information made available by this method can not be obtained by any other means of attack. Not only is the method invaluable in the study of gross lesions of the rectum and sigmoid, but it is also helpful in obtaining specimens of stool for microscopic study. The incidence of finding intestinal parasites in feces obtained from the sigmoid is very much higher than when similar studies are made from the stool. I am convinced

that if a routine proctoscopic examination was made in all patients complaining of rectal bleeding, or diarrhea, or constipation, many lives would be saved, in that an early diagnosis of carcinoma of the rectum and lower sigmoid region frequently could be made at a time when surgery offers the greatest opportunity for a cure.

The finding of occult blood in the stool is of definite value in the diagnosis of peptic ulcer and gastric carcinoma. The patient should be placed on a meat-free diet for at least three days before the stool is collected, so as to exclude all possibility of meat in the diet being the cause of occult blood in the stool; also, bleeding from the gums, nasopharynx and rectum must be excluded. If those directions are followed and occult blood is found in the stool, it indicates that the bleeding is most likely coming from the stomach or duodenum. Of course, bleeding may occur in other portions of the gastrointestinal tract, as in malignant disease of the colon, ulcerative colitis and tuberculosis of the cecum.

The results obtained from the examination of one stool specimen may be misleading. Therefore, at least three specimens taken at intervals of one or more days should be examined. If the stool persistently contains occult blood, it is a definite indication that an ulcerative lesion is present; conversely, if the stool is persistently negative for occult blood, it probably indicates that an ulcerative lesion is not present. I say "probably not present" because one may have a peptic ulcer or malignant disease of the stomach which was not bleeding at the time the stool specimen was taken. It is also well to bear in mind that bleeding from malignant disease of the stomach does not occur until the stage of ulceration is reached, and this may be sometime after the onset of the disease.

In conclusion I think one is justified in stating that in making a diagnostic study of a digestive disease, the history and physical examination must be given first consideration. The knowledge thus obtained enables one to select the one or more special procedures indicated in the further study of the case. When the data revealed by the special study is correlated with the findings obtained from the history and physical examination, a correct diagnosis can be made in a large percentage of cases. A small group of cases, however, still remain undiagnosed even though a very careful, complete, diagnostic study has been made.

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Discussion

DR. D. A. MACGREGOR, Wheeling: I have been very much interested in the excellent review of the major diagnostic problems of gastroenterology just presented by Dr. Freeman. While the speaker takes pains to emphasize the great importance of the patient's clinical history and physical examination, at the same time, his paper points out very convincingly that the accurate solution of the more difficult diagnostic problems is absolutely dependent upon the intelligent use of the x-ray and other laboratory facilities.

In discussing the subject of chronic appendicitis, Dr. Freeman voiced my opinion in regard to the value of x-ray study. The filling or lack of filling of the appendix is not significant. A beading of the appendix is of doubtful significance. The fluoroscopic study gives us the only dependable information. In the dark room under the examining finger the appendix may be found to be definitely tender to the touch. If it is adherent to adjoining structures and can not be readily moved there is some reason to believe that it is the victim of previous inflammatory disease. Differentiation from inflammation involving the right tube and ovary can sometimes be accomplished by moving the appendix to a higher position in the abdomen. If the tenderness moves with the appendix as we observed it under the fluoroscope, we may assume that it is the organ involved.

Alvarez has called attention to the harm that has been done by the persistent unrestricted use of the "roughage" diet and bran. A patient was recently referred to the Wheeling Clinic with the request that we try to prove or disprove the presence of amoebic dysentery. That patient, who was known to be highly neurotic, had been having frequent attacks of the most severe diarrhea for a period of three months. The stool examination was entirely negative except for the presence of large quantities of bran. Somewhere she had gotten the idea that

it was a good thing to eat bran. She took up the hobby with the usual enthusiasm of the neurotic and never dreamed that it was the cause of her trouble. The more or less accidental finding of the bran in the routine examination of the stool solved the problem. Removal of the bran from the diet resulted in an immediate cure.

Let me emphasize another point in Dr. Freeman's excellent paper. A man of sixty-five years worked every day up until he came to the Clinic, as he said, to get some medicine for dyspepsia. For several weeks he had noticed a heaviness in the epigastrium after meals. His appetite was poor and he had lost about ten pounds in weight in the course of the winter. To our dismay the routine x-ray revealed a cancerous growth involving one-third of the stomach. These serious gastrointestinal lesions often give treacherously mild symptoms. Practically all chronic digestive disturbances after the age of forty merit investigation by x-ray.

The same observation applies to those cases in which a disturbance in the action of the bowel suggests the possibility of a growth involving the colon. Such a lesion is best demonstrated by the barium enema x-ray. It is occasionally missed in the ordinary gastrointestinal series. We are well repaid for numerous negative investigations when we discover one cancer early enough to be able to cure the patient by its removal.

This brings me to the last point I wish to make. Successful treatment of malignancy in the intestinal tract as well as elsewhere requires early diagnosis. For the most part such a diagnosis is made by x-ray. In general, patients do not have gastrointestinal studies made as early or as often as they should be done. One of the main reasons for this is the cost of the x-ray series. Probably we are all charging too much for this work. Certain well-equipped and well-manned institutions are able to do it on a lower cost basis than the private x-ray laboratory. If the cost to the patient could be reduced materially, more of these examinations would be made routinely. It seems to me that this would probably be the best way for us to accomplish a reduction in the mortality rate for malignancy in the gastrointestinal tract.

THE CONTROL OF CIRCULATORY FAILURE IN DIABETIC COMA *

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INSULIN became available for use by the rank and file of the medical profession early in 1923. Since that epoch-making date the control of diabetic coma has been made possible in a large majority of cases. The evolution of therapeutic procedures, to meet the acute emergency of coma, has progressed steadily on a sound physiological basis. The details of these procedures have been exhaustively discussed in previous publications by myself and others.[1-2-8] The basic routine now in use at the Wheeling Clinic was established in 1926. Very few changes in procedure have been found necessary since that time. The more important steps may be briefly summarized as follows:

(1) Elevation of body temperature. This is accomplished by the use of hot water bottles, electric pads and a plentiful supply of blankets. All heating devices are separated from the patient by the thickness of at least one blanket.

(2) Evacuation of the bladder by catheter. A second specimen is immediately collected and examined for sugar and acetone. (This step is necessary in order to secure a specimen which is freshly excreted and to avoid confusion with hypoglycemia or other forms of coma.) The catheter is strapped in place.

(3) The administration of adequate amounts of insulin. Forty to fifty units are given at once subcutaneously. The urine is examined every two hours for sugar and acetone. If the reduction of copper is "heavy," thirty units of insulin are administered; if a moderate reduction, fifteen

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units; if slight, or if there is no reduction, no insulin is given. As much as six hundred units are often given in twenty-four hours.

(4) Gastric lavage. For the complete and efficient emptying of the upper portion of the gastro-intestinal tract, a nasal duodenal tube is passed at once and strapped in place. The contents of the stomach and duodenum are aspirated at frequent intervals. Lavage and feeding may also be carried out as desired. The tube is usually left in place for eight hours, or longer if necessary.

(5) The administration of adequate amounts of fluid. It is wise to begin at once the administration of 1000 c.c. of saline by hypodermocylsis. This may be done while other preliminary measures are being carried out. 1000 c.c. of 5% glucose, containing forty units of insulin, are given intravenously. This is repeated at intervals, depending upon the patient's ability to take and retain the carbohydrate nourishment and fluid administered through the duodenal tube. Orange juice, grape fruit juice and grape juice are administered through this tube in a volume totaling 1000 c.c. for twenty-four hours. A minimum of 1400 c.c. of water is supplied by the same route. A satisfactory schedule is attained by administering forty c.c. of fruit juice and sixty c.c. of water each hour.

(6) Evacuation of contents of colon. This is accomplished by a cleansing enema which should be repeated in twelve hours.

(7) A careful physical examination to establish the presence or absence of other complicating diseases.

It is apparent at a glance that the essential features of the above schedule are the administration of generous amounts of fluid and carbohydrate by vein or nasal tube and the metabolism of this carbohydrate by adequate quantities of insulin. This plan of coma control, as outlined, may be relied upon if carried out with diligence; yet we know that there remains an apparently irreducible minimum of deaths from diabetic coma.

It will be the purpose of this paper to point out a frequent cause of death during coma and to propose certain measures which are apparently capable of preventing the occurrence of such deaths.

Abstracts from Literature.—Joslin, in a recent communication, [2] reports a mortality of 15% in a total of 179 cases of coma. The mortality in twenty-two patients in the sixth decade, reached the astounding figure of 45%; in other words, ten of twenty-two cases died. Many of these patients had apparently emerged from coma, judging by either clinical or laboratory observations. Nevertheless, sudden collapse and death supervened to end an otherwise favorably progressing course. In describing these deaths, Dr. Joslin uses expressions again and again which indicate that circulatory collapse was the cause of death. Typical statements are: "Blood pressure suddenly fell and the patient died"; "He apparently improved for six hours with 200 units of insulin, then suddenly became cyanotic, pulseless and died." He was careful to state that each of these patients received liberal amounts of insulin, fluid and stimulants. In spite of satisfactory laboratory reports a sudden change was noted, marked by abrupt fall of blood pressure, rapid, feeble pulse and sudden death. This is all the more remarkable as sudden changes are seldom noted in diabetic coma. Dr. Joslin further states in the same communication, "Circulatory collapse, so frequently described in fatal cases, remains the most serious problem and at the same time the most challenging because these deaths seem unnecessary and without sufficient organic cause."

Coburn[7] was impressed by the factor of anuria and discussed his fatal cases from this standpoint. He states, "Notwithstanding the use of insulin . . . death continues to occur in patients with severe ketosis." Death occurred in sixteen of this author's cases following "renal shut down." All of these patients presented the picture of circulatory failure with low blood pressure and anuria.

Lawrence[8] draws an analogy between this situation and that presented in cholera and feels that the patients died from depletion of tissue fluids with resulting anuria.

Atchley[3] characterizes the condition as "medical shock." He attributes the phenomena to marked dehydration and possible vasodilating effects of ketones. He concludes that the patient dies because his vascular bed has suddenly become much larger than his blood volume.

Whether approached from the renal, cardiac or vascular standpoint, all authors agree that circulatory failure is quite frequent in diabetic coma.

Case Reports.—CASE No. 1: Mrs. J. W., aged 54 years, was admitted to the Ohio Valley Hospital at 10:00 A.M. At the time of admission she was in coma, but could be aroused sufficiently to take sips of water. The blood sugar was 325 mgs. per 100 c.c., and the CO_2 was 28. The respiration was Kussmaul in type. The blood pressure on admission was 80 systolic and 32 diastolic. The tongue and skin were dry and the eye-balls soft. Administration of fluid, glucose and insulin was begun in accordance with the usual routine. From 10:00 A.M. to 10:00 P.M. 1900 c.c. of fluid, 140 grams of glucose and 280 units of insulin had been administered. Caffein, adrenalin and digitalis was given in full dosage during the twelve-hour period as the uncertain status of the circulation was well recognized. The systolic blood pressure vacillated during the day between 50 and 90 mm. of mercury, but despite the administration of stimulants and fluids it could not be maintained above 70. Sugar and acetone disappeared from the urine and the patient became sufficiently conscious to answer questions intelligently. The family was reassured as to the probable outcome for the patient, but much to our chagrin she suddenly became cyanotic, pulseless and expired.

CASE No. 2: Miss F. N., school teacher, aged 49 years, was admitted to the Ohio Valley Hospital in coma of two days' duration. All tissues, including the eye-balls, were tremendously dehydrated. The blood sugar was 490 mgs. per 100 c.c. and the CO_2 combining power was 21. Systolic blood pressure was 45 on admission. Large amounts of fluid were administered by vein and subcutaneously. Caffein and adrenalin were given in liberal amounts. Despite this fact the blood pressure would not rise and no urine was excreted between the hours of 5:00 P.M. to 4:00 A.M. A catheter was kept in the bladder throughout the night, but no urine was obtained at any time. Despite all efforts the patient suddenly became pulseless and died approximately eleven hours after admission.

The two cases described above may be accepted as typical of many others in our series. They are all characterized by falling blood pressure which can not be bolstered by the usual stimulating drugs. Renal excretion, depending as it does, upon the maintenance of a systolic pressure of 70 mm. of mercury, was much impaired or completely absent as in Case No. 2. Collapse occurred suddenly, often after the acidosis was well in hand and the patient had at least partially emerged from coma.

Discussion.—The underlying mechanism of the profound circulatory change described in the cases above is not difficult to understand. In a prolonged or profound coma carbohydrate oxidation is decreased to a minimum and there is marked accumulation of ketone bodies as a result of this oxidative failure. The resultant nausea and vomiting increases the dehydration and prevents the taking of fluid by mouth. Fluid content of tissues and circulatory system is markedly depleted. At the same time there is an accumlation of ketone bodies which, themselves, probably exert a vasodilator effect on the blood vessels and also act as depressants of the myocardium. This latter effect was demonstrated by Taterka,[4] who carried out electrocardiographic studies on patients in acidotic coma. A marked lowering of the T-wave and production of ventricular extrasystoles were uniformly present in this type of coma.

As the factors just mentioned continue to interact, blood volume is markedly decreased and blood pressure drops. This may be a steady fall or may be intermittent. When the systolic pressure reaches 70 millimeters

of mercury, kidney excretion begins to fall off and we have a functional renal insufficiency. A portending anuria may some times be predicted at this point by the sudden disappearance of ketone bodies from the urine, despite the persistence of a low carbon dioxide combining power. The accumulation of ketone bodies is greatly favored by the falling blood pressure. The organism is thereby deprived of an extremely important means of overcoming acidosis. It is quite probable that the excretion of ketone bodies is of as much importance as the oxidation of such bodies by the metabolism of carbohydrates. Actual anuria may develop and there is an increasing toxic effect on the blood vessels and myocardium. The appearance of albumin, casts and blood in the urine is probably due to renal irritation by the ketone bodies. It is entirely transient and disappears as the acidosis is overcome. The increase in blood urea often observed is occasioned by blood concentration and usually falls as the blood chlorides rise. We feel that the renal insufficiency is a component of the disturbed hydrodynamics of the blood vascular and renal system and has little or no relation to the integrity of the renal parenchyma. Ten of Coburn's fatal cases came to autopsy and all exhibited normal kidneys. It is quite evident then, that the failure of the kidney to excrete ketone bodies forges the final link in a vicious circle which can not be broken by the usual methods of oxidation of carbohydrate with insulin. However, I can see no reason for speaking of this as "renal block," thereby focusing the attention upon the excreting system when the basic mechanism is the tremendous decrease of blood pressure.

Treatment.—We will attempt to indicate certain measures which have been most successful in preventing the deaths of patients from circulatory insufficiency or "medical shock," an extremely apt term used by Atchley. The condition corresponds closely to that seen in severe traumatic injuries.

Therapy must, of necessity, be directed toward the maintenance of blood volume and the induction of diuresis. The first maneuver is the supplying of fluid in copious amounts. Administration by hypodermoclysis is inefficient as absorption is greatly impaired in proportion to the fall in blood pressure; and this statement applies also to fluids given by mouth. Therefore, intravenous administration of a satisfactory fluid becomes necessary. The use of acacia and other inert gums has been rejected on the basis of difficulty of preparation of a satisfactory product at the time of greatest need and the still present danger of rather severe reactions. Immediate choice, therefore, would fall upon that most physiological of all intravenous solutions, namely, whole blood. It contains a non-diffusible substance "serum protein" and for that reason is capable of maintaining the blood volume over the longest period of time per unit of volume administered. We have simply borrowed a measure which has long been in use by our surgical colleagues in the combatting of traumatic shock and have employed it as indicated, in an attempt to sustain the circulation of coma patients. This measure has previously been used by Coburn, Atchley and Lawrence with marked success. There has been in my own cases and in those reported, a permanent elevating effect on the blood pressure and the restoration of renal function with subsequent output of fluid and ketone bodies. We have found that a systolic pressure which could not be maintained at, or above, 70 millimeters of mercury, attained a new level of 100 or better following transfusion. The previously existing anuria is replaced by a gratifying diuresis as the functional renal insufficiency is overcome. The speed of recovery from coma seems to depend, to a great degree, on the freedom of diuresis. Nor are we satisfied with transfusion alone. A large needle of the canula type is placed in a vein in a permanent fashion and 5% glucose in saline is administered intravenously over a period of hours or days, as necessary. A Murphy drip bulb is inserted in the system and the rate of administration regulated by the number of drops per minute. (Fifty drops per minute is a satisfactory speed.) There is probably no limit to the

administration of fluid in this fashion. My colleague, Dr. R. B. Bailey, has kept such a continuous intravenous infusion in action for fourteen days. Several of my patients have been so severely shocked on admission that I have not dared to move them even to the operating suite, but have transfused them in the room. All transfusions are given by the direct method of Lindemann.

The drugs usually employed have been caffein and adrenalin. I can not feel that digitalis is of any direct value in such an acute emergency. Adrephine, a mixture of adrenalin and ephedrine, represents a very helpful stimulating drug. Caffein is used, but should probably be used sparingly, as in full dosage it brings about conversion of muscle glycogen to lactic acid, a substance capable of promoting cardiac arrhythmias. John[7] favors the intravenous administration of Fisher's solution in anuric cases, but I believe the fluid to be more important than the chemicals which it contains.

The system of transfusion and prolonged administration of fluid intravenously has been in use since 1928 and has been employed in all cases whose systolic pressure is below 90 millimeters of mercury on admission, or whose blood pressure declines below this point during treatment. One arm is selected for all intravenous procedures, while on the other arm a blood pressure cuff is left permanently in place. Observations are made on the blood pressure at least every half hour, or more often, if the condition of the patient is critical. An extremely careful check of the hourly excretion of urine is also an essential factor of control of these patients. The output of urine and the level of the blood pressure offer two precise measures by which the course of therapy may be accurately estimated.

Results.—It is difficult to state with accuracy how many of our patients may have been lost as a result of the failure to recognize the importance of circulatory changes. I am quite sure that many of my earlier patients died for lack of something for the heart to pump. I am also convinced that the term "acute suppression of urine" has been an unfortunate one, as in the presence of a complete anuria, the prognosis has been considered so poor as to paralyze effective action. Since my tardy recognition of the circulatory factor in coma, there have been nine patients whom I have considered extremely poor risks from the circulatory standpoint. These patients on admission have all had blood pressures of 70 mm. or below and four have been anuric. Each one was treated according to the basic routine, plus the addition of continuous intravenous fluid, blood transfusion, or both. All nine have recovered. It is impossible to say, of course, that some of these nine patients would not have regained their circulatory equilibrium and progressed to clinical recovery. However, judging by our past experience, it is safe to assume that the majority of these nine patients would previously have died.

Summary.—(1) The basic routine control of diabetic coma has been restated.

(2) We have again called attention to a certain factor, namely, circulatory failure with subsequent functional renal insufficiency as being responsible for a large number of deaths in diabetic coma, particularly in the fourth and fifth decades. Methods for the control of circulatory failure have been described which consist of:

(*a*) Frequent blood pressure readings.
(*b*) Hourly check of urinary output.
(*c*) The continuous intravenous administration of 5% glucose.
(*d*) Above all, the use of whole blood transfusion.

(3) Since the adoption of these measures in the latter part of 1928, we are happy to report that no single coma patient has died as a result of circulatory failure or renal insufficiency.

Discussion

DR. G. H. BARKSDALE, Charleston: In considering the matter of diabetic coma two features are paramount. A consideration of the hyperglycemia as such and, secondly, the effect that it has had upon the body in general, never losing sight of the fact the former should be treated but that its sequel,

the acidosis, must be treated diligently, for it is this which kills the patient.

It is the feeling of many of us that in general we are over-trained in the use of insulin; that is to say, that ultra-scientific men have laid down such minute and inflexible rules as to its use that men who have not used it feel awed. Insulin should be used more frequently with possibly less attention in some cases to detail. This is especially true in acute infections, for in diabetic children a slight respiratory infection alone may be all that is needed to precipitate a coma.

Further, let us emphasize the fact that the prime indications in coma are to give insulin generously to offset the hyperglycemia, and fluids to the dehydration. The kind of fluid and the method of giving it will be governed largely by the condition under which you are working. Do not feel that a stereotyped routine must be put through. Glucose, in cases not vomiting, can be given by mouth or nose, maybe by rectum—50 gms. per 24 hours is adequate. This may be given as glucose in solution. Orange juice or ginger ale, four ounces of either equals about 10 gms. of glucose. If the ideal routine for diabetic coma can not be carried out, put through a modified routine, and it is quite probable if such logic were applied to the handling of this catastrophe, that by far the majority of the "savable" cases can be saved.

The care of the heart is important. All men seem to agree that caffein is valuable. Certainly if the patient is laboring with a toxic myocarditis, his circulation could not be overloaded with fluid nor disturbed too much, whatever the curative methods are to be.

The high-light of Dr. Sheppe's paper, of course, is his use of blood transfusions. I can not speak with direct knowledge of the subject. I can say with emphasis that I congratulate him on trying out a new method, at least new to me. Well-matched whole blood certainly meets the indication of dehydration. It supplies food, and should not produce shock. It is all very interesting and instructive.

DR. R. J. SNIDER, Wheeling: Dr. Fitz reports a mortality rate of 34% in cases of diabetic coma. In Joslin's series, the mortality was 15%. However, in the period since 1926 it has been reduced to 11% John's figures are the best I have seen. His rate was 5.6%. Dr. Fitz gave fluid subcutaneously only. Joslin in the early days condemned the use of fluid intravenously, because of the fear of heart collapse; but he attributes his recent relatively greater success, not only to the use of larger amounts of insulin and to the use of circulatory stimulants, but also to the free use of fluid intravenously as well as subcutaneously. John has always used intravenous fluid freely. Statistics, of course, are always fallacious, but the correlation between the mortality rate in these three series and the use of fluid intravenously, is, I believe, of significance.

Drugs are probably of no benefit. Certainly digitalis is useless in shock. Acherly condemns the use of vaso-constrictors, such as epinephrine. It causes constriction of the larger arteries at the expense of the relaxed capillary bed, which, after all, is the dangerous condition in shock. If any drug is of use, I believe it is caffein. I consider this paper of Dr. Sheppe a most valuable one, and that we have been neglecting something if we fail to note the condition of the circulation. However, on re-reading Coburn's paper, I have noted reports of only two cases where he employed blood transfusion, and his free intravenous infusions of glucose or saline repeatedly raised the blood pressure above 100 mm. systolic, with resulting diuresis and recovery of the patient. In those cases that do not respond satisfactorily to the use of infusions, transfusion of blood should undoubtedly be considered, and I wish to thank Dr. Sheppe for calling this procedure to my attention.

DR. SHEPPE (closing the discussion): I do not believe I have ever seen a heart damaged by either the administration of intravenous fluid or by transfusions. I have always heard a lot about this damage and have always watched for it. I am quite sure that I have seen patients die for lack of fluid in the vascular system, but I really do not believe I have seen a heart embarrassed to the extent of failure by intravenous injections of either fluid or blood.

I would like to state once more that the use of blood transfusions is the procedure which I have attempted to emphasize most particularly as a supportive measure.

Although somewhat aside from the subject, let me suggest that when you are working with coma cases, be sure to pad the heels carefully. It is a very embarrassing thing to bring a patient out of coma and find two days later when you turn the covers down that the tissues of the heels are necrotic and gangrenous. I have been impressed with this because I have had it happen; and although the patient was out of coma in twenty-four hours, it was

twenty-four days before he could be discharged from the hospital.

I was much amused last month in looking over the abstract section of the *Journal of the American Medical Association*, that the erudite abstract editor had accorded nearly a whole column to an article published in an English journal, evidently describing the same type of circulatory and renal collapse that we have been discussing today. The Englishman had considered it from a rather surprising angle. He described a case of diabetic coma in which the patient suddenly stopped excreting urine. He very naively decided that his patient had passed from diabetic coma to uremic coma and solemnly advised "cupping of the loins" as the most desirable therapy.

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THE PRACTICE OF PREVENTIVE PEDIATRICS *

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IT MUST BE apparent to anyone alive to the problems of medicine today that there exist variable degrees of dissatisfaction. Often, as in the case of other controversies, the larger group of the objectors is not entirely certain what is wrong or what to do about it. Of the subjects under discussion, state medicine occupies a prominent place. This term seems to be one which creates in the minds of many hearers a kind of horror, in spite of the fact that they can not exactly define it. In a sense, we not only have state medicine today, but we all approve of it. That part of our taxes which goes to it we pay more cheerfully than certain others. None of us, I think, wishes to remove from the state its control of water-supply, milk-supply, food-inspection, and similar measures which are of the greatest importance to community health. Certainly we are not prepared to assume these functions as individual responsibilities, nor would we care to face the consequences of their cessation. We wish the state to be interested and operative in those procedures which might be called mass prevention. Many of us are willing, too, that the state should concern itself in a definite amount of detailed care in support of the indigent and other unfortunate groups such as the mentally deficient. Someone must do this—either the state or the private purse of voluntary philanthropy. The part of the medical profession in this connection is coöperative. Others furnish the hospitals and the facilities which the physician can not, and the physician donates as his share part of his time and his knowledge. It may even be that part of this burden, when it becomes great, might, to the relief of the practitioner, be borne by personnel paid by the state. Our agreement with all this is contingent upon the fact that it is done properly and that its limits are reasonable. Our intelligent objection arises when the state steps over the line and into the province of the general practitioner.

I would be an usurper of your time, if of nothing else, should I attempt to determine whether the state has actually warranted our criticism, or how much of it. Rather would I like to discuss the prevention of such a danger as state medicine carried to the extent of interfering with the practitioner. In my own opinion, it is not even necessary to defend the thesis that the practitioner is the proper

* Read before the West Virginia State Medical Association, Parkersburg. June 22. 1932. From the B. K. Rachford Department of Pediatrics. College of Medicine. University of Cincinnati, and The Children's Hospital. Cincinnati.

authority for the medical care of well and sick persons. In spite of statements and opinions to the contrary, he is in that position today. For example, in the study of the White House Conference on Child Health and Protection (Pediatric Education and Practice, Section I, Medical Service, page 3), there is this statement: "The vast majority of American children today are dependent upon the interest and care of a private physician for their physical well-being and health, and not upon an organization." There is no question, then, of the responsibility of the practitioner.

How shall we keep the practitioner in his proper position before the jury of his patients? That, I am convinced, is a matter which lies in his own hands. If he practices the proper sort of medicine—that which his patients demand and are intelligent enough to recognize when it is applied—nothing can disturb his high place; the state can not and the people would not.

What constitutes acceptable practice of medicine? It is synonymous with the mere fact that physicians are human, that some of them will be better practitioners than others. No physician, however, needs neglect thoroughness in his practice, nor should he fail to apply the principles of preventive medicine to his individual patients. It is these things which many of them demand. They would rather receive them from him than from the state, but receive them they will. The physician who is busy in the attempt to keep his patients well, in so far as the limitations of our present knowledge permit, has a more satisfactory profession than the mere attendant upon illness. There is, of course, much to do for the sick patient, but there can be much left undone for the presumably well person. Even though we must admit a considerable degree of ignorance about many medical problems, it must be accepted that if there were universally applied in practice our present knowledge of preventive measures, a tremendous amount of disease and suffering could be eliminated.

Prevention is certainly not limited in its scope to any phase of medicine, but it is a particularly interesting and profitable part of the pediatrician's function. There are many correctible defects in foundation which will threaten the later super-structure. It is my purpose to discuss in a broad way only some of these.

Nutrition and Deficiency Diseases.—There are few things in life over which man has such control as nutrition. Of course, there is as yet understood comparatively little of the growth impulse, or, at least, of the methods of influencing it. However, nutrition in the sense of supplying the demands of growing tissue and of the maintenance made necessary by wear and tear of body cells is no longer a matter of guesswork. It is sometimes difficult to curb the enthusiasts on nutrition, but the exaggeration of the unintelligent of them is usually easily recognized. Fortunately the unbalanced faddist creates only a temporary impression, and what is good in his theory is leavened by time and common sense, and becomes adopted as a proper part of the whole subject. The criterion by which unwarranted enthusiasm can be exposed is an emphasis of a single phase of nutrition beyond its obvious value. For example, because certain foods should be ingested in a raw state and are thus digestible, should not lead to the conclusion that all foods must be uncooked.

As a matter of fact there is little need to theorize on the general underlying principles of nutrition. They rest upon sound experimental evidence and clinical trial. They are available to all of us, and we need simply to apply them in the individual case and with due allowance for individual variation. If we could write an equation for the food requirements of any person, no matter what his age, it would be as follows:

Sufficient Energy
Sufficient and Correct Protein
Correct Mineral Balance
Accessory Substances
Sufficient Fluid
Digestibility

= Correct Food for Individual

The requirements of the equation can be met simply, in most instances, by the administration of natural foodstuffs. Our knowledge of the fact that nutrition is not a matter of diet alone must then be brought into use. Proper food is an essential factor to good health, but its digestion and metabolism are necessary for its utilization. The entire regimen should be subject to the physician's observation and advice. He must recognize that in judging nutritional status, the general health, tissue tone, color of mucous membranes and skin, vigor and posture are all to be employed as criteria in addition to weight and its relation to height. He must recognize that great size is not necessarily a mark of superiority and that development may be advanced in a smaller person.

Many of the deficiency diseases are theoretically inexcusable. Scurvy, xerophthalmia and beri beri, for example, can occur only where ignorance prevails or most unfavorable circumstances are in force. Rickets as a serious clinical disease is certainly preventable. The subject of vitamins must here be mentioned. For them the term "accessory food factors" is not inappropriate, since it emphasizes their truly accessory function. Their preventive action in the deficiency diseases can not be questioned, but their relation to growth, to protection against infection, and their effect on health in general in the human subject need further study. The actual quantitative requirement of the human subject for them is not known. They must not be expected to cure all the anemias, anorexias and malnutritions which may be but symptoms of a disease or of an improper regimen. Because they are essential, it does not necessarily follow that large amounts of them do good, nor can they replace a proper balance of fat, carbohydrate, protein, and minerals. While the absence of a certain vitamin from the ration of a rat results in cessation of growth, this can not be interpreted directly to mean that an excess of this factor in the diet of a human will unduly stimulate weight production. What I have said must not be taken to mean that a vitamin-poor diet should not be guarded against. All the accessory food factors should be supplied, but preferably through the selection of natural foodstuffs.

Communicable Diseases.—All diseases of an infectious nature are communicable in the broad sense of the word. There is, however, a group which consists of infections so easily transmitted from one person to the other that they are designated contagious. Of these there are some which are readily preventable and there are some which are actually inexcusable. For example, it is entirely unnecessary for anyone to have smallpox—the effectiveness of vaccination guarantees against the disease. Typhoid fever is another example of a health hazard the acquisition of which is seldom pardonable; where proper hygienic conditions do not exist, vaccination will usually protect against it. At least theoretically, malaria is capable of prevention by the application of our knowledge of its method of propagation. Such facts as these are so obvious that they need no discussion. On the other hand, there are controversial subjects which need further study, and the science of medicine has not as yet presented us with needed knowledge about certain diseases, nor can we evaluate to our entire satisfaction the results obtained by applying what knowledge we possess. I can only mention briefly a few of these diseases, and those which are of the greatest practical importance.

Tuberculosis.—This disease is a particularly interesting example of the difficulty surrounding the complete application of preventive measures. In the abstract, the conquest of tuberculosis is simple, and can be accomplished by prevention of exposure. The disease could largely be eliminated as a serious menace by preventing this exposure too early in life. In childhood the mortality bears a close relation—influenced, of course, by other factors—to the age of the patient at his initial infection. The practical difficulties surrounding prevention of exposure in individual cases are often very great, and may involve the entire economic and social structure of the family. Whatever the inconveniences, the facts remain, and the physician's function does

not cease with admonition, but he is concerned with all the details of advice and assistance which he can bring to bear in solving the attendant difficulties. The body possesses a great aid in combating tuberculosis—namely, its ability to develop immunity. Initial childhood infection is the means of stimulating this, and in most instances it is of sufficient degree to conquer later infections. If this initial infection is not too early in life, if it is surrounded by intelligent or fortunate circumstances at the time, immunity is successfully established and tuberculosis disease is not synonymous with tuberculous infection. The physician's duty here is clear. In addition to guarding his patients against too early exposure, he must make every attempt to be aware of the time when tuberculous infection occurs. For this he has the help of tuberculin test and roentgenogram to supplement his clinical study. Many children muddle through their initial infection without anyone being aware of it at the time. Knowledge that a child is infected does not in itself necessitate invalidism, but an intelligent and close observation of the situation, with action in each case based upon this, will save many children. Here is the art combined with the science of medicine.

Can man assist or duplicate or even improve upon nature by artifically producing tuberculous infection? Should we attempt, by inoculation or ingestion of tubercle bacilli or their products to produce immunity? In other words, to ask a specific question, are we ready to recommend the use of attenuated bovine tubercle bacilli, the so-called B.C.G.? It would be greatly foreign to this presentation to dilate upon this controversial subject. If my own personal opinion interests you, it is that much work still needs to be done and much careful analysis carried out before I am willing to apply this procedure in daily practice.

Diphtheria.—Certainly we must include this disease in the list of preventable ones. The facts in the case make it every practitioner's duty to determine by means of the Schick test the presence or absence of immunity in his patients, and to protect them, if necessary, by injections of toxin-antitoxin or preferably toxoid. Proper application of these procedures would practically eliminate diphtheria, and it is not too much to hope that in a few years this disease could be made a rarity.

Scarlet Fever.—While we preach the prevention of diphtheria with assurance, the same is not entirely true of scarlet fever. It would take much time to evaluate the many studies on the several phases of etiology, pathogenesis, prevention and treatment of this disease. Who can state with positiveness that all the symptoms of scarlet fever are due to bacterial function or toxin action, or whether some of them are allergic in nature? Certainly the clinician is not in a position to do this when careful students and investigators disagree. Extensive observation and careful study seem to prove, however, that the attempt to produce active immunity by the injection of scarlet fever toxin is worthwhile, although this procedure is not successful to the same extent as in diphtheria. With care as to dosage and with knowledge that systematic reactions may sometimes occur, toxin injections have decided value in the prevention of the clinical disease scarlet fever.

Whooping Cough.—When all the evidence is considered, the prevention of pertussis by a vaccine of the Bordet-Gengou bacillus seems to be of relatively little value. To support this as an absolute fact would be difficult and I am not sure it would even be wise to attempt it. Rather I would like to assume the attitude that I would not care to discourage anyone's belief in its efficiency since I see no harm in trying it. Unfortunately pertussis spreads, as do other of the infectious diseases, because it is contagious in its early stages and before the diagnosis is suspected. It is this that makes prevention difficult. The so-called cough-plate method in which the patient coughs into a Petri dish containing a proper medium, may make the diagnosis earlier when the clinical symptoms are not characteristic. This diagnostic procedure is relatively simple and may be applied to intestinal epidemics, and, with coöperation of boards of health or

other organizations having facilities for bacteriological study, to community epidemics.

Measles, Chicken-pox, Mumps.—These three diseases, from the point of view of prevention, may be grouped together. The agent causative of each of them is either unknown or, at least, not universally accepted. In regard to measles the possible rôle of a green-producing streptococcus and specific preventive serum developed from its injection into animals is still in the controversial stage. In all these diseases, however, we have a measure of prevention which has unquestioned value, and, if properly employed, offers a large chance of success. Serum or whole blood from convalescents is effective, although not completely reliable, in prophylaxis, when injected intramuscularly shortly after exposure. It may be used in institutional epidemics and in certain other instances where it is particularly advisable, because of attendant circumstances, that an attack of the disease should be avoided. In periods of epidemics, communities have often been able to solve the practical difficulties of obtaining convalescent's serum. Frequently in private practice the physician may be in a position to secure the needed serum or whole blood. Certain studies have shown, too, that dried convalescent's serum retains protective properties, and this fact may lead to a readily available source of supply.

An interesting method which has been advocated is *partial* protection against measles. By waiting until about seven or ten days after exposure and then injecting intramuscularly about 10 c.c. or more of convalescent's serum, a mild attack of the disease is usually assured, but active and permanent immunity secured. This procedure may be employed to obviate the disadvantage of the passive immunity induced by early injection of convalescent's serum, in which the protection lasts for only approximately two weeks.

Mental Hygiene.—In discussing this subject one must almost inevitably touch upon the subject of Eugenics, or, preferably, Race Hygiene. Something must be done to avoid a continuance of a family strain where the certainty or even great possibility exists that degeneracy, feeble-mindedness and disease will be present. This is a problem for both the physician and the state to decide. To ignore it is morally and economically unsound. In some few diseases and abnormal conditions the influence of heredity is almost mathematically known, but in many others knowledge is meager or entirely lacking. The factor of hereditary influences is without question and applies to physical characteristics and intellectual traits. Of course, we must often blame our far-distant progenitors as well as our more immediate ones, and occasionally bless them, too, if we are fortunate. Sometimes the condition becomes difficult, indeed. For example, the active, nervous, high-strung child who has inherited these characteristics lives with parents in an environment which results naturally from these circumstances. If the physician brings his wisdom and knowledge to bear, this environment can be so managed that greater good will come of it than of a less complicated one; never perhaps the placidity of the latter, but the accomplishment may be greater. We must not attempt, nor even wish, to make a tall, thin, active, alert, so-called "nervous" child into a fat, phlegmatic one, but we must recognize the material with which we work and mold it to the best use. It is not wise to ignore heredity, but it is foolish as well as hopeless to admit that nothing can be done about it. There is too much proof of the accomplishments brought about by modification of environmental factors to ignore them.

Discussion.—In this very brief time I have attempted to point out a few of the measures which can be carried out by every practitioner of medicine. I have tried to emphasize the responsibility of the physician in the management of the health of his patients. His duty to his patients begins early in their lives. At times something can be accomplished for the child even before he is born. Disease may be prevented by proper treatment of the mother during her pregnancy. The most definite example of this is in the case of syphilis. Much more difficult to prove are other influences, but the very term "Parental Care" connotes

the belief that exists that proper supervision of the mother is worth while both for her and for the child.

Infancy, from the physical point of view, is the baby's most serious time. Someone has expressed it thus: "The most dangerous occupation in the world is that of being a baby." If the infant survives his early hazards, he becomes our charge. He has not the intelligence of deciding his needs, or of altering his environment. The responsibility belongs to others, and it is a heavy one, indeed. Nature has clearly taught that the baby should have human breast-milk, and if he does not get it for at least the first few months of his life, it should be only for reasons which are unquestioned. The artificially-fed infant is much safer than he was in the past, but his feeding must be supervised, not according to the printed directions on a tin can, but by the physician—the expert in this matter. The nutrition, the health, and largely, too, the training of the child must be directed by someone who considers him as an individual. This child and future man is not a standardized machine. His potentialities are distinctly individual, and they must be fostered. His nutrition must be judged only by careful study and not on any single criterion. If his tonsils are to be removed, it should be done not as part of a wholesale competitive program, but only because indications exist. And so it goes, and it all proves that the practitioner is the mainstay in the health program of the community. I wonder how many of you have read the "Children's Charter" to which the White House Conference pledged itself? I can only quote a part of this: "For every child understanding and the guarding of his personality as his most precious right; for every child a home and that love and security which a home provides; for every child full preparation for his birth, his mother receiving prenatal, natal and postnatal care; for every child health protection from birth through adolescence including periodic health examinations, protective and preventive measures against communicable diseases and the insuring of pure food, pure milk and pure water; for every child from birth through adolescence, promotion of health including health instruction, wholesome physical and mental recreation." There is much more which is worth while reading. I urge the practitioner's place in such a program.

Discussion

DR. GEORGE M. LYON, Huntington: This paper by Dr. Mitchell is a very able and excellent one. I so completely and thoroughly agree with it that it does not permit much of discussion. I do want to plead for a sympathetic attitude to the problems that Dr. Mitchell has presented. His presentation is completely in accord with the attitudes advocated by the White House Conference.

The care of the child, called pediatrics, has reached a dignified position in the medical world and is accepted as one of the three fundamental branches of medicines, standing on a parity with medicine and surgery. Those of us who have been in practice, particularly those in general practice, realize the tremendous volume of our work which has to do with children. That the child has not been studied as properly as he should have been in the past, certainly we must recognize. If we do not pay a greater attention to the child, and if we fail to have the proper attitude toward child care, we can not fulfill our missions as physicians. I would like to emphasize the real importance for all practitioners in the art of medicine to have the attitude presented by Dr. Mitchell today, an attitude which is wholesome and essential to the best interests of the child.

DR. A. A. SHAWKEY, Charleston: When we speak of preventive pediatrics, we think of inoculations, which Dr. Mitchell has mentioned, but putting nutrition in the foreground in pediatrics is a most wise and most reasonable thing. As a rule, we very much underestimate the value of nutrition in infancy and early childhood as a means of preventing disease. Building up a healthy body with a normal resistance to disease is the most potent means of preventing disease in childhood and in later life.

In the report given out by the Children's Bureau covering a study of the causes of death of all children in the registration area of the United States for a period of two years (about 300,000 cases), it was shown that 90% of the deaths were in children who were not properly nourished. That is, nourishment in itself is 90% potent in the prevention of disease.

The general practitioner, perhaps more than the pediatrician, is neglectful of the importance of nutrition. Most of the pediatric work is done by the general practitioner, because the number who limit themselves entirely to children's work is small. Proper nutrition is a most important and a most potent method of preventing disease, not only in childhood but later on through life.

DR. C. L. HOLLAND, Fairmont: I can add nothing to the excellent discourse we have just heard, but should like to emphasize what has been set forth on the matter of nutrition. It seems to me that fully 90% of children of pre-school age show clinical evidence of rickets in some degree. The problem of nutrition, or lack of nutrition, in early life transcends all other problems; and the scope of its influence for good or evil, physically, mentally, morally and culturally, can not be estimated. We can not, in season or out of season, give too much attention to this subject.

I am glad, indeed, to get Dr. Mitchell's views on the matter of the B.C.G. inoculation against tuberculosis. He seems to me quite logical.

May I ask Dr. Mitchell, if, in his closing remarks, he will elaborate somewhat on the subject of scarlet fever immunization? I have had but little experience in the use of this measure, but I seriously question its efficiency in its present state of development.

Also, if the doctor will be so kind, I would be glad to hear his opinion as to the value of and advisability of giving the stock antitoxin in the treatment of scarlet fever. I have used this serum in a limited number of cases and it seemed to me that the most I got was serum reactions. These were, with one exception, of the late type, and were extremely severe; so severe, indeed, that I question if the patient would not have been better without the serum.

I have been in practice for more than thirty years and it seems to me that scarlet fever is less severe in its manifestations than in my earlier experience. It is lately, in my experience, a mild disease, and only occasionally is a severe case encountered. I lately, however, attended a virulent case of this disease in a girl of five years, which terminated fatally, despite the best efforts of myself and two of my associates. In view of the generally mild form in which the disease is manifested, and the severe reactions following the use of antitoxin, I seriously question whether the general application of this agency, in its present state of development, is not more severe than the scarlet fever itself. I should like to hear Dr. Mitchell's view of the subject.

DR. MITCHELL (closing the discussion): Dr. Holland has asked a difficult question, at least for me to answer. My remarks, of course, will be directed primarily to immunization against scarlet fever, about which I think something more definite can be said than about the treatment by antitoxin. The difficulty in my own mind is in knowing what exactly is the rôle played by the hemolytic streptococci in scarlet fever. Just why in scarlet fever should nephritis develop as late as it does; is the rash, perhaps, of an allergic nature; what symptoms are due to the organisms themselves, and what, perhaps, to toxins? I do not believe these matters are clearly settled. I do believe that it is quite possible to render a person who is Dick positive, negative by injections of scarlet fever toxin. There is difficulty in ascertaining just what the significance of the Dick Test is. There are too many variations in it. I have seen patients who have recovered from the disease yet with positive tests, and those who contract it yet having negative tests, and so on.

Now, in regard to scarlet fever antitoxin, we have tried it in the Cincinnati General Hospital and studied it very carefully. After reviewing the literature, I am only more confused. I find that a great many opinions have been expressed, but very few of these were backed up by any acceptable evidence. It certainly has an *antitoxin* value; its other properties are not so clear. There is a great difference of opinion regarding its effect on complications. The only thing I can say is that where we used the serum, and where we had a very definite controlled group, complications were decidedly less than in those patients who had no antitoxin.

I do not believe that scarlet fever antitoxin should be given in every case. I think it should be given early in toxic cases, and in severely sick ones.

I am glad you are interested in the subject of nutrition. I think it is particularly important because the times are such in this country that it seems to me a large group of children are going to suffer, and I think we need to be tremendously careful not to err in this matter of diet and nutrition. You should look over the diets of these children, so that you may be sure that they receive certain essential elements, even if the family income is much less than it used to be.

I think the important phase of pediatrics, now and in the future, is that the practitioner must pay more

and more attention to the subject of mental hygiene and behavior. When we analyze all the various viewpoints on the ways of bringing up a child properly from a mental standpoint, we are in a quandary. However, we must give this matter consideration. My plea is that it is not something the doctor can avoid. He must enter into that part of the child's care. The physician who sees a child and treats it for diphtheria, or prevents it from getting diphtheria, serves a very definite function. But he must not drop the matter of the child's well being at this point. In our clinic in Cincinnati, not long ago, we went over the records to try to determine just how much the mental aspect entered into individual problems and we felt that just about 80% of the children who came to the clinic had something to be done for them in the way of mental hygiene. Often it is a simple matter. An analysis by a psychiatrist is not needed. It is merely purely common sense that is needed.

THE PEDIATRICIAN AND THE PRIVATE PRACTICE OF PUBLIC HEALTH *

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SINCE the year 1900 changes of a revolutionary character have been taking place in the practice of medicine. Methods of diagnosis, treatment and prevention of disease based on scientific discoveries made during this period have to a great extent replaced the empirical procedures so commonly used by physicians in the past.

With such a vast amount of scientific knowledge at hand it soon became apparent that no one person could possibly acquire and successfully apply all of this scientific information, hence various groups of specialists have been developed within the profession to whom the general practitioner and public may look for advice and assistance when the need of some special type of medical service is indicated.

Among the specialties that have been developed are public health and pediatrics. Let us now consider the definition of the specialty known as public health since it is to be the subject discussed in this paper. "The term is comparatively a recent one and not nearly so old as law, religion, medicine (and are these easy of definition?)."[1] Dr. H. S. Cumming, Surgeon General, U.S.U.H.S., has given us the following definition of the term, "Public health is a specialty of medicine whose function is to make applicable and to apply medical knowledge for the preservation and improvement of health of populations." While Dr. Matthias Nicoll, Jr., former Commissioner, State of New York Department of Health, gives us the following more detailed definition, "The field of public health comprises two chief functions: First, the administration and enforcement by health officials of the Public Health Law; and, second, the promotion by coöperation between official and non-official health agencies—including the medical profession—of well conceived and practical measures directed toward the preservation of life and improvement of physical and mental health."

Dr. Nicoll's definition, you will note, places the responsibility for the administration and enforcement of the public health laws squarely on the shoulders of health officials and the promotion of practical measures directed toward the preservation of life and improvement of physical and mental health not only as a responsibility of health officials, but one also that should be assumed by all non-official health agencies which includes the medical profession.

In order to engage successfully in the private practice of public health, physicians must have a thorough knowledge of environmental sanitation, preventive treatment, procedures for the early discovery of disease, communi-

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cable disease control and methods of education of the public in the principles of healthful living. Let us now consider in detail the various items mentioned above.

Environmental Sanitation.—Environmental sanitation includes the sanitation of the home and of the community as a whole. Education of individuals and of the public in general to the importance of sanitation of the home as a means of safe-guarding not only the health of children but of persons of all ages must include definite instruction to home makers concerning the importance of cleanliness of the home and its surroundings, of having safe milk and water, the proper disposal of human excreta through the use of sanitary pit privies or safe sewage systems, of manure and other fly breeding materials from barns and homes, screening of homes and the proper care of the food supply in the home.

Community sanitation includes the securing of safe milk and water supplies; proper disposal of waste material; the sanitation of all public buildings within the community; prevention of the contamination of food sold in stores, markets, etc., by requiring proper coverings for same and the physical examination at regular intervals of all persons engaged in the production and sale of food stuffs. This latter procedure will, if contamination of food stuffs is to be prevented, preclude the employment of such persons as are acute or chronic carriers of communicable diseases.

Preventive Treatment.—One of the commonest defects that occur in children, especially in the last half of the first and the first half of the second year of life, is rickets. Rickets is especially common in the temperate zones and, contrary to the belief which formerly existed among physicians that it occurs more commonly among the poorer classes of people, more recent observations have shown that it is a disease that is prevalent among children of all classes.

During the last four years I have had the opportunity to examine from 1,500 to 3,000 infants and children of pre-school age annually, living in both urban and rural communities in West Virginia. A large percentage of these children were found to be suffering from rickets or exhibited changes in the bony structures which indicated that they had suffered from an attack of this disease earlier in life.

From the histories of these cases the following data was obtained:

1. That some of these children, especially in the rural areas, had been breast fed until three or four years of age.

2. Practically all mothers having rachitic children reported that no anti-rachitic preparations, such as cod liver oil, had been administered at any time or they had been given in very small doses over short or irregular periods of time.

3. That sun baths were seldom given to these infants.

4. That large numbers of parents had never consulted a physician or visited a well baby clinic to secure advice concerning the child's care. Others gave histories of having taken the baby to a physician to have it examined and for advice concerning its care, and for their pains and interest were informed that an examination was not necessary for the baby was doing well, or were advised if it was deemed necessary to institute artificial feeding to secure a can or bottle of some infant food prepared by a commercial house and to follow the directions on the label; and that no advice was given concerning the necessity of adding to the diet preparations having anti-rachitic properties or of the importance of sun baths as an aid in prevention.

5. Parents whose children were suffering from rickets or who showed evidence of having had this disease earlier in life almost uniformly stated that these children were subject to frequent infections, especially of the upper respiratory and gastrointestinal tracts; that they were slow in teething and that early decay of the teeth was a common occurrence.

A number of health officers and public health nurses have also reported cases of scurvy and pellagra among children and

adults, both of which are the results of improper diet and are preventable.

The majority of children so afflicted show marked improvement in growth and development and powers of resistance to infections when placed on a properly balanced diet containing all the food elements necessary for the proper maintenance of a normal state of health.

Is it not reasonable to assume, therefore, that the development of chronic infections of tonsils, adenoids, ears, and sinuses, of acute infections of the lungs and gastrointestinal tract and early decay of the teeth may often be prevented by feeding infants and young children diets which contain all of the elements in sufficient quantity that are essential for proper growth, development and protection against infection and through the observance of the ordinary rules of hygiene and sanitation?

Diarrhea.—Another nutritional disturbance that commonly occurs among infants and young children as the result of improper feeding or the feeding of contaminated food is diarrhea. In West Virginia it is annually the cause of more deaths among children than any other disease. In the five-year period from 1926 to 1930 a total of 5,892 children under six years of age succumbed to its ravages and of this number 90.34% occurred among children under two years of age.

According to a preliminary report, prepared by the U.S.P.H.S. covering the first nine months of 1931, West Virginia had the highest diarrhea mortality rate per 100,000 population of any state in the Union.

Nutrition of School Children.—A survey of the nutrition of 42,219 rural school children in thirty-four counties of West Virginia made in December, 1931, revealed the fact that 9,763 or 23.12% of these children were 10% or more under-average weight, using the Baldwin-Wood tables as a standard. The highest percentage of children 10% or more under-average weight in any one county was 57.9% and the lowest 2.0%. In the agricultural areas 25.24% were 10% or more under average, in the mining 24.02%, in the industrial 20.74% and the mixed 15.56%.

Immunization.—In spite of the fact that smallpox vaccination has been known to the medical profession for a period of 134 years as a positive means of prevention, there still occur in the United States an average of 55,000 cases annually.

Diphtheria and typhoid immunization are discoveries of comparatively recent years, but conclusive evidence is at hand to show the value of these procedures as preventive measures, yet a survey recently made and reported as a part of the proceedings of the White House Conference on Child Health and Protection reveals the fact that only 22% of the urban and 7% of the rural children in the United States under six years of age have been immunized against diphtheria.

In West Virginia during the five-year period 1927 to 1931 there were 489 deaths among children under six years of age and 143 in the age group six to nineteen reported as due to diphtheria. The age period at which diphtheria immunization is of greatest value is, therefore, obvious. In the same period of time typhoid fever was reported as the cause of death among 55 children under six years of age and of 345 in the age group six to nineteen.

Mental Health.—A number of preventable disturbances of the mind and nervous system often found to be present in older children, adolescents and adults are the result of improper environmental conditions that existed during the childhood of the individual so afflicted.

Procedures for Early Discovery of Disease.—The periodic health examination is the most important procedure physicians have at hand for the early discovery of disease. These examinations in so far as children are concerned should be made at frequent intervals in the early periods of life in order that defects which may have a decided influence on the present and future physical and mental health of the individual may be detected early and remedial measures instituted. To secure the most satisfactory results from such

examinations, they must be thorough and should include a complete history of the child's birth, life from birth, the environmental conditions under which it lives, history of disease, immunization, habits, associates, the reaction to its environmental surroundings and, finally, the actual physical, and where the history indicates the necessity, a mental examination.

Communicable Disease Control. — Physicians must be familiar with the cause, if known, the methods of dissemination and the measures to be employed to prevent the occurrence of epidemics of such diseases. As previously mentioned, we now have available methods of proven value for the prevention of three of the communicable diseases, namely, smallpox, diphtheria, and typhoid fever. Immunization against scarlet fever and the use of convalescent serums, discoveries of more recent date, have given the medical profession new weapons for preventing or aborting the severity of others of the communicable disease group.

In order to prevent the spread of communicable diseases physicians must see that all such cases and contacts are isolated and that proper sanitary precautions are taken to safeguard the health of other members of the household harboring the disease as well as the public in general.

It is the legal duty of health authorities to establish quarantine and placard homes harboring communicable diseases and contacts, and to see that all other measures necessary for the protection of the public are carried out during the period of isolation required for diseases of this character.

In order to properly perform these functions health authorities must have some means of knowing when such diseases exist in the community. It is only natural, therefore, that physicians are required by law to report within a stipulated time all cases of communicable disease coming under their observation to the local health authorities. Many physicians, however, fail to comply with these requirements with the result that no quarantine is established. Contacts are not ferreted out and isolated and the health department may as a result have to combat an epidemic which might otherwise have been easily prevented.

Many patients still believe that the communicable or so-called "children's diseases" are not a menace to the health or life of children and deliberately expose their own to known cases suffering from such diseases. Many also fail to secure medical service when the child contracts a communicable disease and furthermore take no precautions to prevent the spread of the infection to others and this may lay the foundation for the development of an epidemic.

The majority of epidemics of communicable diseases can be prevented if all physicians will practice universal immunization against those diseases for which reliable means of prevention have been developed, report promptly to health officials all such cases discovered, give explicit instructions to attendants regarding the isolation, care of the patient, sanitation of the home and health authorities ferret out and isolate the contacts and carry out such other measures as are necessary to prevent the spread of the infection to others.

Method of Education of the Public in the Principles of Healthful Living.—The physician may have a thorough knowledge of environmental sanitation, preventive treatment, procedures for the early discovery of disease and of the methods of communicable disease control, and yet be unsuccessful in his efforts to safeguard the health of his patients and the public in general on account of the fact that individuals and the public have had little or no education in the principles of healthful living.

Public health education is divided into two classes: first, that which concerns the education of individuals in the principles of healthful living, and, second, of the public in general.

It is primarily the duty of practicing physicians to conduct the campaign of education for the benefit of individuals and of health authorities for the general public.

Since their activities are confined exclusively to the care of children, pediatricians are in a most advantageous position for the private practice of public health, especially by the application of methods for the education of parents in the principles of health living as they apply to children. That such educational measures are of the utmost importance is readily understood when we consider the fact that the majority of those who contract communicable diseases are children, that it is in this age group that nutritional disturbances occur most commonly and that these infections and nutritional disturbances often cause death or permanent damage to the individuals and that they are largely preventable.

These educational measures involve the giving of definite information to parents regarding the general care of the child, the preparation, safeguarding and administration of its food, the sanitation of its environment and the dangers that confront it if these instructions are not carried out as given.

Other important measures are the education of parents to the necessity of having the child examined periodically in order that the physician may determine whether its growth and development are proceeding normally and for the detection of physical or mental defects in their early stages of development and stressing of the importance of their being corrected before permanent damage results. The physician should also inform parents of the dangerous nature of communicable diseases, the methods of prevention, and should urge, especially, the immunization of all children against those diseases for which serums and vaccines of proven value have been developed.

Practically all pediatricians are carrying out such a program of health education of individuals but, comparatively speaking, pediatricians are few in number in comparison to the group comprising the general practitioners and in the final analysis it is this latter group that is entrusted with the care of the majority of children.

Unfortunately and through no fault of their own, many general practitioners, especially those who graduated prior to the year 1920, had little or no opportunity to secure an education in the principles and practice of preventive medicine, for it is only in the last decade that such instruction has been given as part of the medical course. Unless such physicians have become interested in the subject of preventive medicine since graduation, they confine their efforts almost exclusively to curative methods of practice and hence are not in position to render preventive service to those seeking their professional advice.

Here again pediatricians can be of decided service to individuals and the public in general by arousing the interest and assisting in the education of general practitioners who have had no opportunity to secure a course in preventive medicine. Such interest can be aroused and the educational measures carried out through lectures given before local medical groups, and the publication and distribution of literature to the medical profession pertaining to the subjects included under the heading of preventive medicine.

For a number of years the State Department of Health has been conducting such a campaign of education for the benefit of the physicians of the state through the preparation and distribution of articles on subjects pertaining to public health and preventive medicine.

Mass methods of education of the public in the principles of healthful living are carried on by health authorities through the various publicity channels, such as newspapers, magazines, pamphlets, radio, etc., and by the use of practical demonstrations of preventive measures in order that the public may learn that such measures are of real value for the prevention of disease and the maintenance of a state of normal health.

Close coöperation between all official and non-official health agencies and the public is the foundation on which a successful public health program must be based and education of individuals and of the public in the principles of healthful living is without doubt the

most valuable means physicians and public health workers have available for securing the public's coöperation.

The success of any public health program is ordinarily measured by the numerical reduction which occurs in the morbidity and mortality rates within the area concerned.

In spite of the fact that there has been a mortality reduction among children under six years of age of 18.11% for the six-year period 1926 to 1931, much remains to be done for West Virginia, according to a preliminary report of the Bureau of the Census of the United States Department of Labor for 1931, had the seventh highest infant mortality rate (deaths of infants under one year of age per 1,000 live births) of the forty-five states included in the report.

A few of the problems that must be solved if further reductions are to occur in our morbidity and mortality rates for infants and young children have been presented in this paper.

These problems can be solved if the medical profession will practice preventive as well as curative medicine, and coöperate with health officials in the education of individuals and the public in the principles of healthful living.

Discussion

DR. GEORGE M. LYON, Huntington: I feel quite sure from the coöperation I have had from the State Health Department that they have the right attitude. I am not so sure we can defend the attitude the physicians have maintained in this particular problem to date. It certainly is true that the physicians have not gotten to "first base." Our White House Conference reports show this to be a fact. If the State Health Department can get the physicians to do what has to be done, then all right. The problem has been put to the medical societies and yet, as a group, they have done nothing productive of results. Some of the doctors who have never given an immunization complain the most about the State Health Department. As I see it, we have all to be missionaries. Haven Emerson has said the most direct and effective route to the solution of public health problems, especially preventive work, is through education. Dr. Vest, in a recent address, said there were three dangers to which our profession must be mindful. The third he referred to as the menace of "dangers from within." In this category should be placed ignorance about and indifference to preventive and educational programs for both physicians and the laity.

I feel that this section is taking a real step forward in having the representatives of the State Health Department coöperate with us and meet with us as part of our small body. There are many communities which will not permit inventories to be taken themselves. They do not want the bad sanitary conditions which exist to be known. Such community attitudes can not be effectively combatted by the individual physician. The State Health Department, as I understand it, is just about as helpless as the individual physician to go ahead and accumulate the unpleasant data. This is particularly true as to sewage systems, open sanitary sewers and privies. Some of our largest cities refuse to admit they have "slums."

I feel the suggestion that Dr. Hood made is good. The school physician is not ordinarily appointed by the medical society but is politically appointed. The school physician is not the man for the State Department of Health to work through in a given community as he is a political missionary, as a rule a good party man. It might be a good idea to pick out two or three men from the County Society as the Society's representatives to go ahead and coöperate with the State Department in a community program. I believe with a "give and take" attitude on both sides, we may all benefit by it. I find when good pay patients do go to the state for free immunization that at that same time a great many more people do come to me and I get a direct benefit from the campaign, both personally and as to my regular clientele.

DR. DAVID LITTLEJOHN, Charleston: Before discussing Dr. Paden's paper we would like to answer two questions which have been asked during the progress of the discussion. The first, When will the health departments discontinue free immunization?" To this we would say, that depends upon the physicians. When they demonstrate that they are actually doing this immunization and that they are not only willing, but are in reality coöperating with the health departments in the effort to control and prevent the various communicable diseases, then the health departments will gladly turn over to them the work of immunizations. We know that there are a good number of physicians who are doing this now, but unfortunately there are a large number who are not, and they are the ones who

are delaying the time when the health departments can legitimately discontinue the program of actual immunization.

The second question was, "Why health departments immunize those who are able to pay?" In answering this an explanation is necessary. The health department is an official agency, created and maintained by the fiscal body elected by and representing all persons in the community. Therefore, no health official has the right or can set an arbitrary standard and say to one, "You can be immunized," and to another, "You can not be immunized." If people bring their children to the health department for immunization, we can not refuse them, though they may be millionaires. They are taxpayers and a part of the community, the same as anyone else. So far as the official responsibility of the health department is concerned, those who can afford to pay for the service are equally entitled to the protection, as those who are dependent upon the community for their support. The medical profession can eliminate this problem, by seeing to it that all their patrons who can pay for the service are immunized as a part of their regular professional care.

Dr. Paden has certainly brought out the fact that one of our main problems in West Virginia is "infant diarrhea." As a state we occupy a most unenviable position in regard to this condition. With a mortality rate last year of over 54 per 100,000 population we led the country. Nothing to be proud of. If our mortality from this cause could be lowered, it would bring the infant mortality rate for the state to a much lower level. If this is ever accomplished, the medical profession must take an active interest in it. The profession must not confine their interest to the treatment of the condition nor yet to the direction of a suitable diet—all of which are highly essential, but they must be interested in it from the standpoint of community sanitation. As an example of what the physician can do in this connection, the following incident is a good illustration. A few weeks ago, in a coal mining community, there developed an explosive outbreak of diarrhea, 75 cases developing in two days. Camp sanitation was bad, the insanitary open-back type of privy practically the only type in the camp area. The physician in charge of this camp having a highly developed sense of the value of prevention, immediately realized that the cause of the outbreak was the insanitary conditions existing, flies carrying the infection from the open-back privy and contaminating the food of those who became infected. He had every privy in the camp disinfected and kept so, with the result that there was an immediate drop in the number of cases developing, from 75 in two days to two or three a day. He had attacked the source of the trouble, and by changing the feeding place of the flies from the family privy to the dining table, the diarrhea was immediately checked. This is the kind of interest we would like to see taken by every physician in the state. Only instead of waiting until the disease breaks out and then simply disinfecting the insanitary privy, we would have them see that sanitary privies are built and so do away with the necessity of such outbreaks as the one we have just cited. With such foresight on the part of the medical profession, we can effectively lower the incidence and death-rate of infant diarrhea.

DR. A. A. SHAWKEY, Charleston: Dr. Littlejohn throws out the challenge that they will give up the problem of preventive inoculation as soon as we take it up. We can not take over this work as long as it is done free, because people will go where they can get it done for nothing.

DR. PADEN (closing the discussion): I hope that every health officer will act on Dr. Hood's excellent suggestion that the services of all local physicians be enlisted in the campaign of public health education. As a part of this campaign I would suggest that local medical societies hold a number of open meetings each year at which papers pertaining to public health and preventive medicine be read and discussed, thus offering the general public the opportunity of securing reliable information regarding the prevention and control of various diseases.

Free immunization can and will be discontinued for those who can afford to pay as soon as the medical profession is willing and ready to assume the responsibility of seeing that it is properly carried out.

If the State Medical Association will outline and conduct a campaign whereby all immunizations, except for those unable to pay, are done by practicing physicians, health authorities will be glad to discontinue the practice of giving free immunization to all who apply.

At the present time health authorities are immunizing few children under two years of age. Physicians can and should see that these children are so protected.

1. "What is Public Health"—Am. Jour. Pub. Health, August, 1928

CYSTITIS IN THE FEMALE *

By BERLIN B. NICHOLSON, M.D.
Parkersburg, W. Va.

CYSTITIS in varying degrees of severity is observed in a large percentage of female patients; and, moreover, regardless of the nature of the major complaint, urinary pathology is likely to be found during a careful study of almost any type of case. Therefore, cystitis is in no sense a subject of interest to only the urologist, but it is often of greater interest to the general practitioner, internist and general surgeon. It, notwithstanding, is of especial interest to the gynecologist and urologist, who most often are called upon to treat patients having the more severe manifestations.

Early recognition of urinary tract infections by the family physician and adequate conservative treatment instituted by him, will take care of many cases, which, otherwise neglected, develop into chronic and resistant disease presenting difficult problems in therapeutics. Any case that, from a symptomatic and physical standpoint, does not respond promptly to conservative treatment is deserving of most careful study.

Although the underlying etiologic factor may be mechanical or infectious, or a combination of the two, yet, in either instance, infection always plays the final part. The mechanical factor may in certain instances initiate the cystitis and then cease to take part in the pathology, while in other instances the initiating mechanical factor continues to be active, contributing its influence in perpetuating the infection. Under the latter circumstance the pathologic anatomy usually must be corrected before the urinary infection can be eliminated.

Among mechanical factors are traumatic injuries to the bladder. Since the injury may vary in degree, its importance in initiating and perpetuating a cystitis naturally varies with the nature and severity of the trauma. Surgical injuries may be placed in the same category as traumatic injuries, in so far as they constitute a causative factor in producing cystitis. Aside from actual penetration of the bladder wall, injuries to the innervation and blood supply are important factors relative to vesical infection. Any condition that decreases the tone of the vesical musculature or disturbs the normal reflex arc of micturition, thereby preventing complete emptying of the bladder, is bound to play a part in causing and perpetuating a cystitis. This factor may be mild and transient, or it may be severe and of long duration.

Over-distention of the bladder may also produce a more or less transient disturbance of the mechanism of micturition, which disturbance no doubt is chiefly due to imbalance in the innervation of the bladder. Often a general anesthetic and various post-operative sedatives contribute to this phenomenon. Various degenerative processes in the spinal cord produce permanent disfunction of the bladder, resulting often in most difficult situations.

It has been shown that the bladder is normally under control of two sets of nerve fibres: one that inhibits expulsion, therefore, permitting filling, and one that enables the bladder to empty itself. It has further been shown in the work of Learmonth,[1] by giving epinephrin intravenously, that the sympathetic nerves exert an inhibitory influence on the expulsive power of the bladder. The same author demonstrated, by stimulating the presacral nerve, which is largely composed of sympathetic fibers, that, among other actions, it increased the contraction of the internal urethral sphincter; moreover, by sectioning the nerve, it relaxed this muscle and increased the expulsive power of the bladder musculature. Certain patients having a constant residual urine apparently due to exces-

* Read before the West Virginia State Medical Association, at Parkersburg, June 21, 1932.

sive inhibitory nerve action were cured, or relieved in part, by sectioning the presacral nerve.

Other mechanical factors in the production and maintenance of cystitis are extravesical pressure, such as from pregnancy and from various pelvic tumors. Cystocele and urethrocele are also common causes for cystitis. Rarely in the female is a vesical diverticulum responsible for bladder disfunction. Intravesical tumors, calculi and foreign bodies may at times be the etiologic factors. Moreover, anything producing more or less obstruction in the urethra may be the cause of cystitis. Urethral stricture in the female is more common than is generally appreciated. In a series of 250 cases, Briggs[2] found ten per cent of strictures, his criterion for a strictured urethra being any adult urethra that would not permit the easy passage of a French-18 catheter.

Cystitis usually is of a purely infectious nature, the mechanical factor at most being only slight. Often, however, there may be a constitutional factor, which in the course of treatment must be carefully considered. Furthermore, many cases of cystitis are due to upper urinary tract infections, which may be of an acute nature and will respond to simple conservative therapeutic measures. Other upper tract infections may be secondary to mechanical conditions and will not respond to treatment without first having eliminated the inciting mechanical factor. Under certain circumstances, a cystitis may be set up through proximity of the bladder wall to an adjacent infectious process, such as an acute appendicitis, or an acute pelvic inflammatory disease. Moreover, the extention upward of an acute urethritis may be responsible for the bladder infection, which, once set up, may continue even after the urethral infection has subsided to a chronic state. This fact may be easily overlooked in the absence of a careful examination of the urethra. Further causes for a cystitis may be various focal and systemic infections, also general debility. Often these latter factors can not be proven to be the primary etiology; nevertheless, in the presence of a cystitis, initiated by whatever cause, the bladder infection will not satisfactorily respond to treatment without simultaneously eliminating foci and overcoming systemic and debilitating disease.

Post-operative Cystitis (from the records of the Henry Ford Hospital, Detroit).—Some time ago I became interested in certain aspects of bladder infections seen in post-operative gynecologic patients. The records of 200 unselected cases were carefully reviewed and various data tabulated. In some respects these records were unusually satisfactory for such a study, as most of the patients were operated by, or under the direct supervision of, one gynecologist (Jean P. Pratt) and were subjected to a fairly uniform preoperative and postoperative routine. All had a thorough physical examination and the usual routine laboratory work. The majority of the physical examinations were made by men who had had two or more years of clinical work and, moreover, were trained in the fundamentals of a thorough physical examination.

At the time of operation, after the perineum and vagina had been cleansed with green-soap and sterile water, followed with ethyl alcohol, the bladder was catheterized, a specimen being retained for culture. On the third day post-operative, another culture was taken and, if positive, it was repeated every third day until found negative and the patient remained free from symptoms, or until her discharge from the hospital. Catheterization was done every eight hours when the patient was unable to void, and, in any event, on the third day for residual urine. If the residual was found to be more than 30 c.c., catheterization was repeated until there was none, or the arbitrary minimum reached. It might also be stated that this series is from a private institution and that the majority of the patients are from what might be called the middle class. Of the two hundred only eight are negroes.

The following data is of interest:

Wassermann positive (strongly)	6 cases
Wassermann positive (weakly)	2 cases
Devitalized teeth	123 cases

Infected tonsils	127 cases
Nasal accessory sinuses infected	19 cases
Nasal accessory sinuses questionable	15 cases
Preoperative bladder symptoms	73 cases
Postoperative bladder symptoms	23 cases
Preoperative bladder culture positive	42 cases
1. Bacillus Coli	32 cases
2. Staphylococcus	8 cases
3. Streptococcus	2 cases
4. Yeast	1 case
Postoperative bladder culture positive	157 cases
1. Bacillus Coli	110 cases
2. Staphylococcus	80 cases
3. Streptococcus	37 cases
4. Yeast	1 case

The figures pertaining to foci of infection were obtained because of the relative importance of focal infection to urinary tract infections. As previously stated, the focus of infection may not initiate the urinary infection, yet it may have much to do with its continuance, either through the organism active in the focus or through a secondary invader, which may supplement or replace the original causative organism. Though the possibility of focal infection is very great in the majority of cases in the present series (86%), the etiologic relationship to cystitis is indeterminate. There were 172 cases in which one or more foci were possible. The significance of preoperative and postoperative bladder symptoms, as noted in the 200 histories, is more or less doubtful. Often the symptoms could not be correlated with the cultural and microscopic findings. The fact that so few postoperative symptoms were recorded means, in all probability, that there was failure on the part of the interne to note symptoms, or to evaluate their significance in the presence of a gynecologic operation.

After the record of 150 cases had been examined the results were such as to induce me personally to follow the cultural and laboratory examinations of fifty cases. The microscopic and chemical examinations were conducted by me personally. In each case three postoperative catheterizations were investigated. In only three cases was the preoperative catheterized specimen positive for albumin as compared with 13 routine voided specimens. These findings, considered with the further fact that 56 of 150 routine preoperative specimens were positive for albumin, are clear evidence that in the average gynecologic patient a positive albumin, on other than a catheterized specimen, is virtually useless. Though data was not collected the same significance may be applied to the findings of pus in the uncatheterized urine.

In the series of 50 personally checked cases, 22 at one time or another, or in one or more of the three postoperative cultures, were positive for more than one type of organism. Moreover, there were 32 cases positive for bacillus coli, 22 for staphylococcus, 7 for non-hemolytic streptococcus, 4 for hemolytic steptococcus, and 3 for undifferentiated streptococcus.

In comparing the figures for the personally checked series of 50 cases with those for the 150 cases taken from the general hospital records, the ratios for the type of infection found are: streptococcus, 2: 1; bacillus coli, 4: 3; staphylococcus, 1: 1; yeast, 1: 1; and mixed infections, 4: 3. Where more than one type of organism was found bacillus coli was nearly always present. Also, it might be noted that these figures were about what one might expect, when it is understood that three postoperative cultures were the basis for the figures in the 50 special cases, as compared with a single culture in the 150 cases. Often when the first culture would be negative a subsequent one would be positive; therefore, *it would seem that the longer a patient be catheterized the greater the possibilities for a bladder infection.* In the 200 cases, the ratio of the preoperative positive cultures to the postoperative positive cultures was 1: 4; in the 50 selected cases taken alone it was 1: 5. Moreover, in the special series of 50 cases, catheterized urine being used, the preoperative and postoperative positive albumin ratio was 1: 3.5. In the instance of the albumin, the more pronounced reading was usually seen during the early postoperative period, whereas, in the case of the pus, the greater amount was nearly always found in a specimen obtained subsequent to the first catheterization.

The special series of 50 cases was divided into two equal groups of 25 cases, for the purpose of studying the sterilizing and prophylactic effect of an instillation. In one group of patients, nothing was instilled into the bladder, whereas about one ounce of a 10 per cent solution of argyrol was instilled into the bladder of the other 25 patients following each catheterization. In each group, the first catheterization yielded 18 positive cultures; from the two subsequent catheterizations there were 21 positives in the uninstilled group and 16 positives in the instilled group. While these figures show a slight balance in favor of the instillation, it certainly is not conclusive in favor of argyrol.

Each patient of the 200 cases was catheterized at least twice and some were catheterized many times. Those being catheterized the greatest number of times were for the most part those patients having preoperative symptoms. The majority were catheterized from two to four times. The period of observation for the bladder and urine was from one to three weeks. Those patients, however, having definite vesical symptoms, in the presence of a pyuria and infected urine, were often followed much longer, particularly where the infection and symptoms were slow in disappearing.

Apparently there seemed to be no correlation between the nature of the pelvic operation and the occurrence of an urinary infection, the predominating factor being catheterization. Neither did the preoperative or postoperative symptoms—the more predominating being dysuria and frequency—have any great significance, other than possibly to indicate the intensity of the acute cystitis.

Diagnosis.—The diagnosis of cystitis, in the majority of cases, is not particularly difficult. However, it is often rather difficult to eliminate the related etiologic factors, especially where there are no frank symptoms or signs of pathology in the remainder of the urinary tract or associated contiguous organs. Much depends upon the examination of the urine; and, it might here be stressed, that the specimen should be collected after the patient has carefully douched and cleansed the vagina and vulva, or the specimen should be obtained by catheterization. The type of epithelium theoretically might be of some aid in determining the portion of the tract from which the cells came, or give some idea as to the severity and depth of the inflammatory process. Actually, however, it is doubtful whether clinical application bears out such a supposition. Pus in the urine is the most important diagnostic finding in urinary tract infections. Blood is often found in the more acute and fulminating type of infection, and the hematuria is usually terminal. As the bladder empties itself of the last few cubic centimeters of urine there is an increase in the pain and, if there is sufficient inflammation, blood also may be squeezed from the bladder mucosa. The finding of bacteria in the freshly obtained specimen is of some importance. Where the organism is a motile bacillus it it usually bacillus coli. In some cases the finding of bacteria is the most important diagnostic feature, for little or no pus may be present. This condition usually obtains in the debilitated patient, who may be having most acute and persistent bladder symptoms. Moreover, there is a type of infection, more correctly diagnosed as trigonitis, in which the gross and microscopic findings may be negative. These patients often complain of a rather vague vesical neck discomfort and a slight increase in frequency. The urine when cultured in nutrient broth will usually yield a streptococcus. Cystoscopically only a low-grade inflammatory reaction of the trigone is to be seen. Albumin in the absence of blood usually means upper urinary tract pathology. An elevation of temperature is of some importance, for rarely does a simple cystitis cause fever.

The symptoms of which the patient may complain naturally vary with the severity, duration and extent of the infection. The most frequent complaints are dysuria, frequency, nycturia, terminal hematuria, cloudy urine, suprapubic pain and occasionally no symptoms at all. When there are no symptoms there may be some question as to actual involvement of the bladder mucosa; certainly the trigonal area is not greatly involved, provided the bladder is normally innervated. In many cases there may be a bacilluria, and even a pyuria, before the bladder mucosa becomes greatly involved.

Treatment. — Postoperative cyctitis and bladder infections seen in pregnancy, also those complicating the various systemic and debilitating diseases, may be reduced to a minimum through certain prophylactic measures. Except where absolutely necessary, preoperative and postoperative catheterization should be eliminated. Where catheterization is found to be necessary it should be carried out after having carefully cleansed the

urethral orifice and adjacent parts. With the patient in bed this is extremely difficult and, as generally carried out, is next to useless. Catheterization should be left to the physician or a nurse known to be careful and efficient in the technic. The forcing of fluids to their limit following operation and in the acutely ill and debilitated patient will go far to prevent bladder infections. Though argyrol did not prove effective in the present clinical series, there are many other preparations which should prove more or less effective in preventing postcatheterization cystitis. Some of these, when used following postoperative catheterizations, may also act to stimulate the return of voluntary bladder control, provided there be no damage to vesical innervation and not an unduly extensive traumatization of the bladder and adjacent parts. Esch[3] reports very satisfactory results from the administration of myrmalyd,† 7½ grs. (0.5 Gm.), three times a day, continuing the administration three days after the last catheterization. Where it was necessary to continue the drug for several days it was stopped for 24 hours to allow for taking cultures. Using this routine in 1784 operative cases only two per cent developed cystitis over against 24 per cent occurring during one year when no myrmalyd was used. The disadvantage, however, of any drug requiring constant oral administration for its effect, is the interruption necessitated by a general anesthetic. Esch somewhat obviates this difficulty by giving myrmalyd the afternoon before and on the morning of operation. He also believes the hexamethylen preparations produce a postoperative diuresis, which in itself may be of value.

When an infection of the bladder is known to exist, treatment should first consist of simple and conservative measures, which may vary according to the severity of the infection and the underlying cause. In the milder infections of short duration, forcing fluids will often promote the clearing up of the urine as the general health of the patient improves. Irrigations of some mild antiseptic solution are of great benefit in many cases. Half saturated boric acid solution is an inexpensive and satisfactory solution. Following irrigations the instillation of one of the relatively non-irritating, mild antiseptic solutions, no doubt, is of more or less value. Although sterilization of the bladder mucosa can not be expected of any irrigation or instillation, yet inhibition of the growth of the infecting organism may be anticipated. Any irrigation or instillation that is so irritating to the acutely inflamed bladder, as to make treatment next to intolerable, should not be used.

Alkalinization of the urine, preferably with one of the buffered effervescent salts, often renders the urine less irritating and may even have an inhibitory action upon the growth of certain organisms. A mixture of tincture of hyoscyamus and potassium citrate may lessen irritation and promote relaxation of the vesical musculature.

The value of urinary antiseptics administered orally is always a subject for debate. Various preparations have been exploited by pharmaceutical houses, and always at great cost to the public, if not to the physician himself. A few of these preparations have even been given more or less recognition by the Council on Pharmacy and Chemistry. None, so far as I have been able to ascertain, have had their supposed virtues substantiated by adequate clinical and laboratory studies, from which the data had been carefully checked and correlated.

In my experience, hexamethylenamin given in rather large doses is of value in clearing up some of the more resistant chronic infections. It, however, is rather irritating to the acutely inflammed mucosa and for this reason should not be given in certain instances. Moreover, in large doses it may be irritating to the renal epithelium, evidence of which must be carefully watched for in the urine. Preceding the administration of the drug by about one hour sodium acid phosphate should be given in a sufficiently large dose to insure an acid urine.

In any case of cystitis, in which there may be a mechanical or other contributory factor, such a possibility should be early eliminated. In many postoperative patients residual urine

must be determined and dealt with from the start. Strictures, foreign bodies, upper urinary tract infections and various mechanical factors, as previously noted, must be kept in mind. Any case of cystitis that does not respond to simple conservative measures within two or three weeks should have a cystoscopic, and perhaps an urethroscopic, examination, including differential renal function tests, cultures of the urine from each renal pelvis and pyeloureterograms. It is quite obvious that a cystitis will not clear up as long as aggravating and contributory factors are active. Many cases, likewise, will not respond satisfactorily as long as foci of infection exist elsewhere in the body. The patient individually, as well as the disease, must be kept constantly in mind.

Summary and Conclusions.—The histories of two hundred patients undergoing various gynecological operations are studied relative to postoperative cystitis. An effort is made to determine the significance of certain associated and interrelated factors. Among these catheterization seems to be the most constant predisposing cause in the production of postoperative cystitis. Surgical traumatization, pelvic infection and general anesthesia are also important factors in certain cases, and, no doubt, greatly influence the duration of the disease and its response to treatment. Etiology, diagnosis and treatment of cystitis in the female are discussed in general.

Discussion

DR. D. A. MACGREGOR, Wheeling: I bring apologies and explanations for my associate, Dr. Gill, who was so absent-minded as to arrange for his wedding ceremony during the week of the state meeting. Dr. Nicholson was kind enough to send us a copy of his paper in advance. Dr. Gill and I read it over and enjoyed it very greatly, and want to express our appreciation of it. From the standpoint of the general practitioner there are two or three interesting things about this problem of cystitis I would like to mention.

All of us are very prone to decide upon a method of treatment before we make a careful diagnosis. Complaints suggestive of cystitis are very common among female patients, and we are very apt to prescribe a little medicine immediately after suspecting the trouble, hoping to cure the patient without having to resort to special diagnostic procedures or unusual therapeutic measures.

There are three or four common disorders which may be easily confused with a simple cystitis. In the first place, urethritis gives practically the same clinical symptoms. In the second place, chronic interstitial inflammation of the walls of the bladder, in contradistinction to the mucosa of the bladder, presents similar symptoms. It is in connection with the chronic interstitial inflammatory that the so-called Hunner's ulcer develops. A third very common condition which is easy to confuse with simple cystitis is an inflammation of the trigone. Fortunately, there is a very simple method of differentiation between these afflictions. A catheterization carried out under sterile precautions will differentiate chronic interstitial inflammation of the walls of the bladder from urethritis and simple cystitis, because in both urethritis and simple cystitis, you will find an abundance of pus, whereas, interstitial inflammation of the bladder walls does not produce pyuria. There you have an immediate, a clear-cut distinction. Urethritis can usually be differentiated from cystitis by a simple direct examination and digital expression of pus from the urethra. Differentiation between chronic inflammation of the bladder wall and trigonitis can likewise be done in a simple manner, by estimating bladder capacity. In a case of interstitial inflammation of the bladder walls, a fibrous contracton of the viscus occurs which diminishes the capacity of the bladder so that in the typical case it is not capable of containing more than 100 c.c. of urine. In a case of trigonitis there is no contraction of the bladder. The content is somewhere near normal. There you have an immediate distinction between chronic interstitial inflammation and trigonitis.

I bring this up just with the idea that perhaps the general practitioners, you and I, are too prone to accept a hasty impression without looking a little farther to find out if the patient might perchance have one of these three other common diseases which may be easily confused with simple cystitis.

The last thing I wish to mention is the use of argyrol after catheterization. Dr. Nicholson mentioned it in his discussion and I agree with him whole-heartedly. I have had some experience with argyrol, perhaps old solutions, but they behave most unpleasantly in the female bladder. It has produced incrustations on the bladder mucosa and has also been precipitated in lumps within the organ so

that the cystitis was intensely aggravated. I have seen it passed from the bladder in chunks after weeks of distress. We now use other antiseptics such as mercurochrome, or just the simple irrigation with boric acid solution.

DR. NICHOLSON (closing the discussion): I have little to say other than to thank the gentlemen for their kind discussion and for the additional points brought out. I would, however, like to stress one point concerning Dr. MacGregor's discussion relative to interstitial cystitis. I am afraid he is leaving the impression that the diagnosis of interstitial cystitis is always very easy. I think Dr. MacGregor had in mind the type of interstitial cystitis that has gone on to a rather advanced stage, there being such a marked contracture of the bladder as to bring about a markedly reduced capacity.

In the early stages about the only way a diagnosis may be made is through careful cystoscopic examination; and even then, if you are not right on your toes and looking for it, after having overdistended the bladder with irrigating fluid, thereby producing a certain amount of hemorrhage, you may miss it. Moreover, even under these circumstances, you may get a hemorrhage into the mucosa, with the resultant failure to recognize an early slight lesion. So, in the early case, diagnosis, I feel, is not altogether simple and may not be made without a very careful cystoscopic examination.

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†According to *Gehes Codex*, a German publication devoted to proprietary medicinal articles, "myrmalyd" is prepared from seven parts of urotropin (methenamine, or hexamethylenetetramin) and three parts of sodium formate. Sodium formate has the action of acetates when administered orally, yet Esch states that myrmalyd has the property of increasing the acidity of the urine.

SOME PHASES OF CONTRACT PRACTICE *

AN OUTLINE OF SOME IMPORTANT QUESTIONS WHICH DESERVE IMMEDIATE CONSIDERATION

By R. G. LELAND, M.D.
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(Continued from February issue)

According to the stated purposes of the plan, the physicians of the new organization would almost certainly be sold out ultimately, if not in a very short time, to the insurance interests. By certain provisions in the plan the group was to undertake to pass on the type of medical care rendered by its members. It further was to undertake to furnish medical opinions for use in court to offset the practice of purchasing false medical testimony. It is stated that the proposed organization would be able to control the expenditure of large sums of money, much of which is now wasted. No details are given as to the nature of these large sums of money, or the manner in which the control of these sums is to be affected. It is difficult to understand the claim that an organization of this type would be able to reduce the medical overhead of insurance carriers. It is believed that the primary interest and concern of any group of physicians is for the welfare of the public rather than the protection of the funds of insurance companies. It is claimed that the association could not only save vast sums for the carrier, but that it would pay for medical services what each case is worth.

With the information at hand, this seems to be another of the plans inimical to the best interests of the public and the medical profession and designed to fit in closely with, or to be taken over ultimately by the insurance carriers.

11. *Bassett Hospital Annual Payment Plan.*—This plan was described under the headings of Medical Economics in *The Journal* of July 9, 1932, as "An Experiment in Collective Medical Service." The plan is

* From the Bulletin of the American Medical Association.

described as entirely a physician's undertaking. The charges for membership are $25 per year per individual, and $100 a year for an entire family of any size. This plan is sponsored by a group of physicians which comprises the staff of the Bassett Hospital; all of these physicians are on a salary basis and all have their offices in the hospital. There are but two other physicians in the community.

The plan has been in operation only approximately one year. The group covered was very small, numbering only 174 members.

Since the physicians are all paid by salary from the hospital, this becomes essentially a hospital plan. The net receipts from the beneficiaries of the service were added to the general hospital fund. The plan can not be accepted as having universal applicability, since it is admitted it applies only to a particular group of individuals and a particular group of physicians working under a particular set of conditions which are far from typical.

12. *Columbia Casualty Company Sickness Insurance.*—Outline of Scheme: The Columbia Casualty Company is a subsidiary of the Ocean Accident and Guarantee Corporation of London, England. The scheme is proposed to extend over the groups of states on the Pacific coast and near by.

Four grades of protection are provided. The corresponding premiums vary from $3 to $10 per month. The service differs principally in regard to hospitalization. The cheaper grades furnish only general ward and floor nursing without drugs and medicines for a period of not more than six weeks. The highest class service provides the hospital care for twenty-six weeks with a private room at a rate not exceeding $15 per day with whatever nursing service and whatever drug and medicines may be prescribed by the surgeon or hospital. The other grades of service provide care midway between these two.

Arrangements with Physicians and Hospitals: The administration of medical service has been separated as far as possible from the financial administration of the company. It is specifically provided that the company shall have no control over the character of the medical practice. Medical and hospital groups are given a contract with the Columbia Casualty Company constituting the medical division as a largely separated organization. One paragraph of this contract provides that:

> WHEREAS, the Parties hereto recognize and endorse the efforts of the medical profession to maintain and raise standards of practice both through individual effort and collective association activities, and agree that the insurance solution of this problem now undertaken must embody fundamental principles not at variance with the principles of the American Medical Association, the American College of Surgeons, and the American College of Physicians; and therefore the following declaration of intent is made by all parties at interest hereto.

The medical groups are selected to cover specific territories and the contract is made with the group. While the original selection of the members of the group in the beginning are made by the promoters of the insurance plan the contract provides that no addition may be made by any such group except by unanimous consent of the members of the group. Furthermore, the author of the plan informed us that arrangements were being made for a central, controlled group of physicians who would name the physicians who might be solicited to form a new group in any new locality where such a group does not now exist.

There is to be no use of any physician's name in any advertising and all advertising must be approved by the medical groups before being issued.

Payments for medical service are provided for by setting aside 45 per cent of all premiums for medical service aside from hospitals and 12.5 per cent for hospitalization. This leaves 42.5 per cent to use for promotion, organization, sales, administration and profits.

It is proposed to organize a corps of salesmen working on a commission, which is expected to be fixed at 20 per cent, selling the insurance to individuals. Provisions are also made for group insurance sales, but this portion of the scheme is like similar schemes in operation elsewhere, except that the medical care required will be provided by the medical groups already described.

The money which goes to physicians is to be divided within the medical group according to a plan worked out by that group itself. The promoter stated that the fee schedule which has been tentatively adopted is an adoption of the French plan. By this system the lowest medical service, an office visit without treatment, is counted as one unit. All other services are considered as a certain multipl eof this unit. The total sum assigned to a group would then be divided by the total number of units of service supplied by the members of that group. Each individual would then receive payment according to the units of service rendered by him.

Criticism.—It must be admitted that if the general idea of insurance is accepted, this plan is one which is difficult to criticize as to details. It has been formulated by expert insurance men coöperating with able medical men with a view to meeting as many as possible of the objections that are generally raised against contract practice. Nevertheless it has some very weak points. In the first place, it provides for no choice of physician except for a very slight trace of such a choice which the insurer has when he decides to accept the services of the group of physicians that are tendered him. The plan has already arranged to take in a number of schemes now existing in California including one which it is claimed now has 40,000 patients. By such an arrangement it is unavoidable that some of the evils existing in these previous groups will be carried into the new scheme.

The medical care must be given by the physicians belonging to the specially selected and organized groups or their assistants. There is no clear provision in the plan as to the number of such assistants which may be employed by any physician within the group or as to their methods of compensation. This would seem to open the way to the defect existing in the original British law, which has now been removed by amendment, by means of which the physician hired a number of cheaper assistants who did work for less than was paid in the insurance plan, the difference going to the physician at the head of the group. It is claimed by the author of the plan that there are two safeguards against this abuse. First, the physician who is a member of the group is required to assume full responsibility for all such treatment; second, he claims that the group itself would not permit any member to undertake such a form of practice which would deteriorate the service to the profit of the individual and the assumed injury of the other members of the group.

The plan inevitably provides for the exclusion of a great mass of the profession from its operation. This would seem to mean that recent graduates could only enter the profession by becoming assistants to members of the group or by attempting to obtain a foothold in the greatly overcrowded and constantly diminishing field of private practice. This point has other features to be discussed later.

The whole scheme rests on solicitation by salesmen at a profit to the managing corporation. Perhaps the worst feature that looms in the immediate present is the certainty of a split in the profession. The author of this scheme admitted that the rumors of the plan, which are already circulating, had given rise to much opposition within local medical societies. He stated that no coöperation had been sought and no consultations held with organized medicine in California. This causes the whole scheme to appear like something of a surprise action which has not been subjected to free discussion. As a consequence there is no group within organized medicine in California now prepared to meet this

proposition and either to oppose it effectively or criticize it or offer a better substitute.

He expects to get 20 per cent of the medical profession within a comparatively short period. He has evidently succeeded in securing the interest, if not the adherence, of many of the leaders of the medical profession in the various localities. He can do this because his plan undoubtedly offers greater security of income and probably a much higher income than the average physician now receives. This lays the basis for an organization within the medical profession on a financial basis and which would be composed of some of the ablest men in the profession. This action will leave the remainder of the profession disorganized and impoverished as they will be unable to secure any considerable share of the private practice on the competition with the high pressure salesmen employed by the insurance companies. This outcome will make difficult, if not impossible, any professional leadership in the solution of the medical problem.

When future developments are considered, which are not simply probable but which if experience elsewhere is any guide are inevitable, the objections grow stronger. It was stated by the promoter of this plan that there are other insurance companies already considering the field. He seems to think that the Columbia Casualty Company by being first in the field will be able to skim the cream from the insurance system. He expects to secure the most capable physicians and has shrewdly outlined his scheme so as to appeal to the class of laymen most susceptible to an insurance scheme. This is the class with incomes from $2,000 to $10,000 a year who find it difficult to save to meet catastrophic illness but who could afford the $5 a month, which he assumes will be the average premium. If this class is absorbed by insurance it will leave only luxury and poverty practice for the private practitioner.

Once there are a number of competing insurance schemes in the field this competition will mean that poorer grades of the population will be successively tapped by schemes offering a cheaper and more inferior service. The next step in such competition in every country has always been that the payment for medical service is cut with the further deterioration of the medical service and decline in professional influence. The author of this plan frankly admitted that, in his opinion, this consequence would follow.

13. *Medical Diagnostic Association.*—The Medical Diagnostic Association of Los Angeles, formerly the Coöperative Diagnostic Laboratories, with a listed membership of 916 physicians, among which many duplications are found, and 45 dentists in Los Angeles, is now completing a plan for flat rate monthly payment contract practice; it plans to build a large office building; it offers physicians solicited for membership rebates of part of the fees charged their referred patients by the association for x-ray and laboratory work and it publishes in its list of members many of the prominent physicians of Los Angeles.

Criticism.—This association is another example of a group of physicians organized within the recognized chartered bodies of the profession to carry on a practice which is to compete very sharply with the remainder of the Los Angeles Medical Association, not members of the Medical Diagnostic Association. The rebating of part of fees collected would seem to be in violation of the principles of medical ethics.

14. *Golden State Hospital.*—The Golden State Hospital of Los Angeles has initiated a health column in one of the Los Angeles newspapers. One of the first of the series of articles entitled "So the People May Know" appeared in the *Los Angeles Evening Herald and Express* of September 2, 1932. This article is concluded by the following paragraph:

> This is one of a series of educational bulletins sponsored by Golden State Hospital and clinics to enlighten the public as to the true value of scientific medicine and its adjuncts and to distinguish it from other forms of treatment. 417-23 Towne Avenue, Los Angeles.

(Concluded in April Journal)

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

The value of procedures for putting the lungs at rest in the treatment of tuberculosis is established. The several methods used are pneumothorax, interruption of the innervation of the diaphragm or the muscles of respiration, removal of portions of the ribs, the insertion of foreign substances or structures between the ribs and pleura, and intrapleural pneumolysis. Recently, a new measure, scaleniotomy, has been suggested for obtaining surgical rest of the lung. Abstracts of two articles on this subject follow.

SCALENIOTOMY—A PRELIMINARY REPORT

Scaleniotomy is the division of the fibres of the scaleni muscles for the purpose of decreasing the motility of the upper chest. This procedure was advocated by Kochs, Els and Junkersdorf in October, 1930, and independently by Gale and Middleton in July, 1931. After their preliminary work the authors felt that they had established apical rest satisfactorily and that the procedure may be a valuable aid, either in conjunction with phrenic exairesis, or when phrenic exairesis has failed and some measure of a relatively conservative type is to be attempted before the patient is subjected to a more radical operation.

Mechanism of Scaleniotomy.—The scaleni are three muscles (sometimes four) of the deep cervical group. They arise from the transverse processes of the third, fourth, fifth, sixth and seventh cervical vertebræ, and are inserted by tendinous bands into the first and second ribs. The scaleni provide anchorage for the first three ribs so that the intercostal group may function on them. Paralysis of the scaleni results in a caudad (toward the posterior) movement of the upper three ribs and exaggerated outward movement of the costal margins on inspiration. This tends to immobilize the pulmonary apices.

Under local anesthesia the scaleni are carefully dissected out and divided as near their insertions as possible. Injury to the subclavian artery and the lower cervical nerves must be avoided. (The surgical technic is clearly described by the author.) When the wound is closed there is a cavity about the size of a pigeon's egg, the severed edges of the muscle having retracted actually 1.5 inches. No bridging with muscle fibres was observed as late as six months after operation.

"The results obtained from phrenic exairesis depend upon the changes in the relationship of one part of the diseased lung to another; and the relaxation and rest. The amount of improvement is not dependent entirely upon the height to which the paralyzed diaphragm rises in the thorax, although in the main this is so. Some improvement may usually be expected from phrenic exairesis in lesions throughout the lung, especially in the lower three-fourths. In the more remote apical lesions, not so much improvement may be hoped for, and it is in these cases that scaleniotomy may be expected to change the anatomy, and the relationship of diseased parts to each other, and rest the area involved.

"In all our cases, as in the cases reported by Gale and Middleton, a marked reduction in the respiratory excursion of the upper part of the chest was noted, due to decreased intercostal movement; and, when the combined operation was done, there was no increased upper intercostal movement, so often seen when the phrenic nerve alone is blocked or evulsed.

"When scaleniotomy is combined with phrenic exairesis, upper as well as lower lung lesions may be expected to improve.

"When scaleniotomy alone was done, very little reaction occurred; three of the cases ran fever for one week, and in two the pulse-rate was increased for two weeks. No complication has occurred, nor has any deformity resulted. The results in these cases are based on their clinical records and clinical progress."

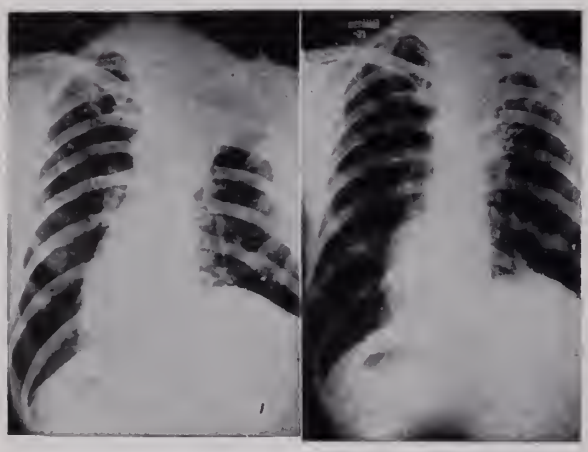
The results in a series of 52 cases were as follows:

Of 20 cases in which a phrenic exairesis had been done previously, and in which improvement had stopped, ten were improved and ten not improved.

Of 29 cases in which scaleniotomy was combined with phrenic exairesis, 19 improved and ten did not improve.

Of 3 cases in which scaleniotomy only was done, two improved definitely. — *Scaleniotomy in the Treatment of Tuberculosis*, Meade Clyne, Am. Rev. of Tuberc., Dec., 1932.

SCALENIOTOMY AS AN ADJUNCT TO COLLAPSE THERAPY.—Fisher discusses the merits of the various methods of collapse therapy and comments on the results of 31 scaleniotomies done at Waverly Hills Sanatorium. Eighteen of these had had phrenic exairesis from six months to three years previously without obtaining satisfactory contraction of the lesion. The remaining 13 patients were subjected to combined phrenicectomy and scaleniotomy. In every case the inspiratory elevation of the ribs in the upper portion of the hemithorax has been markedly reduced or eliminated as noted on inspection and fluoroscopic examination. By actual measurements in comparable x-ray films, the caudad dropping on inspiration showed as much as a 2-cm.



A 6-cm. cavity present for three years. Marked clearing and Contraction in four weeks: phrenicetomy 2 years ago resulted in no improvement.

narrowing in the upper hemithorax. "A downward pull on that side, accompanied by a sense of weight over the upper half of the chest, was voluntarily noted by practically every patient in the series. Cough and expectoration tended to show a moderate increase the first day or two, later subsiding or disappearing altogether. Likewise, moderate dyspnoea was temporarily noticed by a number of patients, as indicative of a transitory reduction of vital capacity. In the patients who had had a prior phrenicectomy these symptomatic effects could definitely be attributed to scaleniotomy alone."

Other favorable results noted include release of tension on cavity walls, the ability to sleep without being awakened by a strangling cough, ability to control cough, no recurrence of hæmoptysis in two patients in whom it had been frequent before, normal temperature in one patient with fever of long duration. Reduction with clearing throughout the lesion was noted in several.

Summary.—The author summarizes as follows:

"Scaleniotomy affords a definite adjunct to collapse therapy and deserves consideration, along with phrenicectomy, in a certain proportion of cases.

"The effect is probably more nearly that of relaxation rather than of true compression, although a negative sort of compression is obtained by eliminating the upward, inspiratory pull exerted by the first and second ribs upon the apex of an adherent lung. Slight narrowing of the upper hemithorax has been shown.

"Striking improvement may be produced by scaleniotomy in a relatively short time, although progressive gains may reasonably be expected to continue over an extended period.

"In a series of 31 cases, some persistent cavities having lung tissue around them have been closed or markedly reduced in size within a very few weeks. Others which were subpleural have been definitely flattened by costal drooping.

"Symptomatic improvement begins immediately in most cases. Relief from cough and decreased expectoration have been consistent effects. Prevention of reccurent hæmoptysis and rapid reduction of temperature to normal have been noted."—*Scaleniotomy as an Adjunct to Collapse Therapy*, Lincoln Fisher, Am. Rev. of Tuberc., Dec., 1932.

JOHN ROLLIN SHULTZ, M.D.

Dr. John Rollin Shultz, prominent Charleston surgeon, died unexpectedly on the morning of February 6, 1933. He was 43 years of age and had been prominent in the activities of the Kanawha Medical Society and the State Association for many years, being secretary of the county society for two years and heading several important committees of the state association.

Dr. Shultz, who had been practicing in Charleston for eleven years, obtained his academic education at West Virginia Wesleyan College, Buckhannon, and at Marshall College, Huntington. Educated in medicine and surgery at the Medical College of Virginia, he graduated there in 1918. He opened an office at Matoaka when he received his license to practice the same year.

Surviving are his widow, and one daughter by a former marriage. His mother and father and one brother also survive.

PRESIDENT'S PAGE

It has long been recognized that the employer of labor should bear some responsibility in connection with accidents sustained by his employees while in line of duty. Prior to the adoption of the Workmen's Compensation Law in 1913 it was usually possible for employers to evade this responsibility by pleading the defense of contributory negligence, whenever an employee sought to recover damages in court.

However, the possibility of being called upon to defend numerous suits for damages on account of injuries was not very pleasing, and employers generally were glad to subscribe to the terms of the Workmen's Compensation Law, which gave them immunity from such damage suits in return for monthly cash payments into the compensation fund.

The Compensation Commissioner was empowered by the act to pay out of the compensation fund for medical, surgical, and hospital care for injured employees, to provide for a modest funeral in case of death, and to pay out certain cash sums to injured employees, or their heirs in case of death, by way of compensation for disability or death due to industrial accidents.

It is evident from the foregoing that it was the original intent of the Workmen's Compensation Law to have employers pay the cost of medical, hospital, and surgical care for injured employees, as well as the other benefits mentioned. Certain industries in our state are evading payment for the medical, surgical, and hospital care of employees who are injured while in their employ. The employee is made to pay this cost himself through payroll deductions. In order to keep his job it is necessary for the employee to submit to these payroll deductions. Usually he does not object to the plan, because the check-off takes care of other accidents and illnesses which occur to him and his family. However, there is at least one industry in the state which removes all of the sugar coating from the proposition and insists upon a check-off from its employees to cover industrial accidents only. If an employee of this company suffers from any illness or accident not connected with his work, he pays for it himself in addition to the check-off.

These employers who evade their responsibilities in connection with industrial accidents remain within the law by virtue of the presence of one certain paragraph (Article A, Sec. 3, Par. [c]) in our present Compensation Law. This evasion is permissible under the letter of the law, but it is absolutely opposed to the spirit of the law. It is wrong—essentially a dishonest practice!

We are confident that every member of our legislature who fully understands the sinister significance of this particular paragraph will be willing to vote to have it deleted from the law. We strongly suspect that any legislator who understands the situation and votes otherwise is directly or indirectly influenced by the interests which profit from the exploitation of their employees in this manner.

R. A. MacGregor.

President.

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ARE WE SOLICITING?

From time to time the attention of the Association is called to some new form of health insurance in West Virginia that involves the solicitation of patients. Every doctor and every hospital that subscribes or participates in any plan of health insurance should first make sure that the element of solicitation is entirely eliminated. Solicitation of patients is the one thing that will bring havoc to the medical profession, because it creates dissension and strife within the profession itself. Organized medicine has little to fear so long as the doctors put up a united front, but organized medicine has everything to fear if the doctors lose faith in one another.

Somehow it rarely occurs to the average doctor or hospital superintendent that there is one form of solicitation that is entirely harmless. That is, the solicitation of patients for some form of health insurance that leaves the patient absolutely free to select the doctor and the hospital of his choice. One such plan is already in operation in West Virginia and, while it has certain faults, it does not antagonize the doctors with the solicitation problem.

No group of doctors and no group of hospitals can operate any ethical plan of health insurance unless all the doctors and all the hospitals are included in the plan. That should be the iron-clad rule in every health insurance plan. Otherwise, either the plan or the profession will sooner or later come to grief.

In order to illustrate our point, let us assume that there are two hospitals in a given community, and fifty doctors. One-half of these doctors belong to the staff of hospital A, and the other half belong to the staff of hospital B. The wage earners in the community have great difficulty with their medical and hospital bills and there is a crying need for some plan that will take care of them.

Recognizing the demand for a sickness fund of some sort, hospital A organizes a health insurance plan. A solicitor is employed. The solicitor calls on the wage earners and, for the payment of $2.20 per month, guarantees them medical and hospital service at hospital A. Little attention is paid to the plan until a sizeable group is organized. Suddenly hospital B realizes that many of its patients have been lured away by hospital A. The staff members discover that many of their patients have gone to the staff members of the now rival hospital. Hospital B, and its staff, can do but one of two things. It can protest to the Association, or it can organize an insurance plan of its own and, by underbidding, attempt to lure its patients back into the fold. Either of these alternatives is bad; very bad.

Suppose in this community, or a similar community, there is a real leader of the profession. He looks far enough ahead to anticipate the chaos that will result from the plan outlined above. So he gets the two hospitals together, he explains the whole matter to the staff members of both hospitals, he recognizes the demand for some monthly-payment plan, and the two hospitals join hands to work out their mutual problem. The result is a plan that may employ the same solicitor at the same rate, but which gives all subscribers free choice of hospital and physician. Here, instead of chaos, we have union. We have a plan that will draw the hospitals and the physicians together, instead of driving them further apart.

Sickness insurance plans should be looked upon by the medical profession, especially in this day and age, as necessary evils. Every sizeable community is going to have some

plan of sickness insurance whether the profession likes it or not. If the doctors and the hospitals don't get together and organize a plan of their own, somebody else will. If such plans are bad, that is all the more reason why they should be controlled within the profession. It is far wiser for the profession to get control of these insurance schemes than to risk the chance that the insurance schemes, in lay hands, may some day control the profession.

The JOURNAL does not for one minute advocate the organization of health insurance plans throughout the state, nor does it endorse any particular plan in any particular community. We do feel that in some sections, where there is an unquestionable demand for some health insurance plan, the doctors and the hospitals would be wise to go into the matter openly and frankly and work out a satisfactory solution before someone else works out an unsatisfactory plan. There is no reason why any county society should hold aloof from such a move.

There has been too much fear and trembling over this octopus of sickness insurance. We have made a bugaboo of it. The subject is taboo in polite medical circles. It is hushed up in county society meetings. What we need at this time is the courage to bring this problem out in the open and the confidence to speak openly on the subject without hurting the feelings of our confreres. Sickness insurance is not a bugbear, but a very decided reality. If it's bad, let's get control of it. If it's good, let's keep that control.

HEALING BY PRAYER

At the time this editorial is being written, a bill is under consideration by the house of delegates of the West Virginia legislature to exempt faith healers from the provisions and restrictions of the medical practice act. The measure, known as H. B. 269, would allow spiritual healers to open business offices and charge fees for treating the sick by prayer. The bill is sponsored by the Christian Science Church.

In protesting against such legislation, the Association has repeatedly pointed out that the question involved is of far more concern to the public than to the medical profession. As a matter of fact, the passage of H. B. 269 would probably increase the incomes of most of the doctors in the state, because, if the bill should pass, there would be a decided upward trend in the number and severity of epidemics. However, the medical profession, not the faith healers, is charged with the responsibility of keeping epidemics under control. We know that epidemics can't be controlled by any group that does not believe in the germ theory of disease.

The motive behind H. B. 269 is to commercialize prayer, so that spiritual healers may open offices, solicit patients, and charge for their services. We have no particular quarrel with the Christian Science Church, but we do feel that prayer belongs to the church and the home. Faith has unquestionably cured many sufferers, yet faith is neither a science nor a business. If faith healing is to be commercialized, let us look at the commercial investment in regulated medical practice in West Virginia.

There are more than 1,500 licensed physicians in active practice in this state today. Each physician spent approximately $10,000 on his education and gave up approximately seven years to preparation and study. We have, therefore, an investment of some fifteen million dollars in medical education in the state. We have, in addition, an investment of more than 10,000 years of scientific study behind the medical profession.

This colossal investment in time and money, built up for the protection of our citizens, is the result of more than sixty years experience under our medical practice act. We can not believe that the legislature of West Virginia will ignore such an investment. Certainly it is not consistent with sound judgment to say that one group (the medical profession) must spend years of study before being allowed to treat the sick and that another group (the Christian Scientists) can go ahead without any preparation whatever.

COUNTY SOCIETY NEWS

OHIO COUNTY

Two interesting meetings of the Ohio County Medical Society were held at the Ohio Valley General Hospital in February, the first on February 3. Dr. Deryl Hart of Duke University, Durham, North Carolina, was the scientific essayist and presented a most interesting paper on "Treatment of Empyema by Tidal Irrigation." Discussion was opened by Dr. R. B. Bailey, Dr. R. U. Drinkard, and Dr. J. W. Gilmore.

Dr. Henry J. Gerstenberger of the Babies' and Children's Hospital, Cleveland, was the essayist at the February 17 meeting of the society. His subject was "Cinematographic Demonstration of Various Conditions and Diseases of Infants and Children." Discussion was opened by Dr. J. R. McClung, Dr. J. T. Thornton, and Dr. J. L. Cowl.

Dr. W. M. Sheppe of Wheeling was one of the scientific essayists at the scientific session of the Ohio Society of Clinical and Laboratory Diagnosis which was held at Ohio State University, Columbus, on January 21. His subject was "Pathological Physiology of Insulin Reactions."

RUSSELL C. BOND, Secretary.

CABELL COUNTY

The regular meeting of the Cabell County Medical Society was held at the Hotel Pritchard, Huntington, on Thursday evening, February 9, with a fine attendance. The program consisted of a symposium on dietetic treatment. Dr. Leo Christian discussed diet and treatment of chronic constipation; Dr. H. E. Beard, diet in diabetes; and Dr. Stuart Van Metre, diet in malnutrition.

Plans are under way for the Cabell County Society to provide club rooms for the members at the Pritchard Hotel. A committee is already at work on the plan and considerable enthusiasm has been shown by members of the society.

W. W. STRANGE, Secretary.

MERCER COUNTY

The regular meeting of the Mercer County Medical Society was held at the West Virginian Hotel, Bluefield, on January 26, at 8:30 P. M. Prior to the medical program there was a banquet for members and wives and visitors. There were 38 present.

The society convened at 8:30 for its regular program and election of officers. Dr. H. Lee Harris was elected a new member. A motion was made by Dr. Blaydes that the society endorse Dr. Littlejohn of Charleston as State Health Commissioner. The motion was carried.

We then had the following scientific papers: "Binovular Twins," report of a case by Dr. Harry G. Steele; and "Treatment of the Hypertrophied Prostate by Resection," by Dr. C. J. Reynolds. These papers were very freely discussed and enjoyed by all.

The following officers were elected: Dr. C. J. Reynolds, Bluefield, president; Dr. W. M. Harloe, Matoaka, vice-president; Dr. R. R. Stuart, Bluefield, secretary (reëlected); Dr. H. G. Steele, Bluefield, treasurer (reëlected). Delegates to the state meeting: Dr. R. O. Rogers, Bluefield; Dr. B. S. Clements, Matoaka. Alternates: Dr. H. G. Steele, Bluefield; Dr. J. L. Markell, Princeton. Censors: Dr. D. B. Lepper, for three years; Dr. D. L. Hosmer, for one year.

R. R. STUART, Secretary.

MARION COUNTY

The annual election of officers of the Marion County Medical Society was held at the Fairmont Hotel on the evening of December 27. Dr. Joe Yost, Fairmont, was elected president for 1933, to succeed Dr. G. V. Morgan. Dr. J. M. Trach was elected vice-president,; Dr. C. T. Francis, secretary, and Dr. C. W. Waddell, treasurer. Dr. Morgan was elected to the Board of Censors.

Delegates to the state meeting at Charleston in May were also elected. The Marion delegates will be Dr. L. D. Howard, Dr. W. J. Leahy, and Dr. P. F. Prioleau. Alternates will be Dr. George Traugh, Dr. J. J. Jenkins, and Dr. G. R. Miller.

The January meeting of the society was held at the Fairmont Hotel on the evening of January 31. The guest speaker was Dr. A. H. Colwell of Pittsburgh, who gave an interesting paper on "Cardiovascular Emergencies."

There was an unusually large attendance at this meeting, 56 physicians being in attendance. Visitors were Drs. C. F. Shafer and R. D. Stout of Grafton; Drs. C. C. Romine, J. N. Simpson, C. C. Fenton, E. B. Tucker, and F. R. Whittlesey, Morgantown; Drs. B. S. Brake, J. F. Williams, C. N. Slater, F. V. Langfitt, S. L. Cherry, Eugene B. Wright, and R. C. Hood of Clarksburg.

Due to a lack of secretarial assistance, Dr. C. T. Francis has found it necessary to submit his resignation as secretary of the Marion County Medical Society. Dr. Traugh is acting secretary until a successor is duly elected.

MONONGALIA COUNTY

Dr. Paul B. Steele of Pittsburgh was the scientific essayist at the February 7 meeting of the Monongalia County Medical Society, which was held in the Coffee Shop of the Morgan Hotel, Morgantown. His paper was entitled "Subacromial Bursitis." The subject was presented in a most interesting and able manner and was widely discussed by the members present.

G. R. MAXWELL, Secretary.

KANAWHA MEDICAL SOCIETY

The regular meeting of the Kanawha Medical Society was held in the Public Library building, Charleston, on the evening of February 14 with an excellent attendance. A number of important business matters were disposed of, including a discussion of pending legislation and plans for the state meeting in May.

The scientific essayist of the evening was Dr. Archer A. Wilson of Charleston, who presented a paper on "Practical Information Obtained from Examination of Spinal Fluid." This paper included a description of the technique of obtaining fluid from the various levels of the cerebro-spinal canal. Discussion was opened by Dr. Phillip Jaisohn and Dr. P. A. Tuckwiller.

The first of a series of case reports was also presented at the February meeting by Dr. Francis Clark, Dr. H. A. Bailey, and Dr. Earl Shamblin, all of Charleston.

M. F. PETERSEN, Secretary.

McDOWELL COUNTY

At the last meeting of the McDowell County Medical Society Dr. G. L. Straub of Welch was elected president for 1933, succeeding Dr. J. Howard Anderson of Hemphill. Dr. C. F. Johnson of Welch was elected vice-president; Dr. H. T. Schiefelbein, Welch, secretary; and Dr. A. C. Van Reenen, Davy, treasurer. Dr. Schiefelbein succeeds Dr. A. G. Rutherford and Dr. Van Reenen succeeds Dr. E. Vermillion.

Delegates to the state meeting at Charleston in May were also elected. The delegates will be Dr. Straub and Dr. H. G. Camper, with Dr. J. C. Killey and Dr. W. C. Hall as alternates.

The annual banquet and dance of the McDowell County Medical Society was held in the Memorial building at Welch on the evening of December 16. Many guests were in attendance and the affair was greatly enjoyed by all.

At the January meeting a paper on "Nervous Indigestion" was given by Dr. Charles B. Chapman. At the same meeting Dr. D. F. Love of Raysal, and Dr. V. L. Wetherby of Welch were elected to membership.

The February meeting of the society was featured by a symposium on the timely topic of "Influenza." This was very ably presented by Drs. C. F. Johnson, V. L. Wetherby, and A. C. Van Reenen.

Dr. W. B. Stevens of the staff of the Stevens Clinic Hospital of Welch continues quite ill at his home where he was stricken with a heart attack on December 15, 1932.

H. T. SCHIEFELBEIN, Secretary.

LOGAN COUNTY

The Logan County Medical Society held its regular February meeting at 8 P.M., on Wednesday, February 15, at the Hatfield-Lawson Hospital with 23 members and visitors present.

After transacting routine business the following scientific program was rendered: Dr. Thomas W. Moore of Huntington addressed the society on "Iritis"; and Dr. James R. Bloss, also of Huntington, on "Obstetric Forceps and Their Use."

Both addresses were much enjoyed and appreciated by the members present. Dr. Bloss exhibited quite a display of obstetric forceps showing the development of forceps from the crude instruments of the past to the more nearly perfected forceps of the present. He also demonstrated the use and mis-use of forceps on his mounted specimen of female pelvis and fetal skull.

FRED E. BRAMMER, Secretary.

FAYETTE COUNTY

The Fayette County Medical Society held its regular monthly meeting February 14 at Montgomery, in the assembly room of the Methodist Church.

Dr. Claude Frazier, Montgomery, presented the scientific program with a paper on "Hematemesis," which was freely discussed by the members present.

The next program of the society will be held at Hotel Hill, Oak Hill.

GILBERT DANIEL, Secretary.

WOMAN'S AUXILIARY

THE STATE MEETING

Plans are already under way for the Auxiliary participation in the sixty-sixth annual meeting of the State Association to be held in Charleston on May 22, 23, and 24, 1933. Mrs. Howard T. Phillips, state president, is working with her various committees in arranging the program for the Auxiliary meetings. The Kanawha County Auxiliary will be in charge of the local arrangements and a number of interesting social functions will be sponsored by the local group.

A meeting with the local Auxiliary at Charleston is planned by Mrs. Phillips some time in March, at which time a definite program and social outline will be worked out. The Auxiliary meeting at Parkersburg last year was one of the largest in the history of the organization and it is felt that the Charleston meeting will be even larger.

COSTS OF MEDICAL CARE

In the last National news letter, Mrs. Freeman's article emphasized the importance and value of *Hygeia*. Today let us turn to the importance of public relations. Every newspaper, as well as medical journal, has given headlines to the reports of the Committee on the Costs of Medical Care. Who more than the Auxiliary should carefully read, discuss and understand both the majority and minority reports and be thoroughly familiar with their arguments and claims?

PUBLIC RELATIONS ACTIVITIES

In the *Pennsylvania Medical Journal* we read from the physicians themselves, "A gradual extension of our public relations activity is the only sane solution for meeting those who interfere with the evolutional progress of medical science." This well expresses the spirit of the recommendations from the Committee on Public Relations through its chairman, Mrs. A. Haines Lippincott, and her committees which should be, and are, reaching to the individual members, for from the Auxiliary columns of the medical journals of many states we find it has become a vital note in our education, each a committee of one carrying with them into other organizations the facts in reference to scientific medicine that should be the common possession of every citizen.

HEALTH INSURANCE PLAN

As preferable as it may seem to stand by and hopefully watch the present array of insurance plans come to grief, the possibility of some one or several of these schemes, proposed by outsiders, meeting with success should spur us all to thought and action along this line. Doctors in the front line trenches need every support that can be mustered to help them in maintaining their private practices and to keep them from becoming the employees of non-medical profit-seeking groups. A policy of unconcern, indifference and unpreparedness can only spell R-U-I-N to the medical profession. A policy of obstruction, which never has succeeded in halting the progress of a scheme in which the public believes, erroneously or otherwise, will only bring discredit to medical men.

Therefore, organized medicine *must* formulate its own application of the health insurance principle if it is to remain master of its own destiny. Otherwise, the scientific and cultural level of the profession shall have been lowered, and the health and happiness of humanity shall have paid the toll for its folly. — J. Milton Robb, M.D., in *The American Medical Association Bulletin*, Jan., 1933.

SCIENTIFIC EXHIBITS

A new innovation for the annual meeting to be held at Charleston next May 22-24 has been planned by the Kanawha Medical Society in the nature of scientific exhibits by the hospitals and clinics in West Virginia. Dr. D. N. Barber of Charleston, chairman of the Exhibit Committee, has already sent out letters to all West Virginia hospitals outlining the plan.

The letter calls attention to the coming meeting and announces that booths will be available for hospital and clinic exhibits. The announcement invites and urges the participation of the hospitals in this idea. Gross or microscopic specimens, laboratory test set-ups, charts, etc., are suggested as the types of exhibits desired.

Any hospital, clinic or individual physician interested in displaying such an exhibit should communicate with Dr. Barber, 1117 Virginia St., Charleston.

The West Virginia Medical Journal

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JAMES R. BLOSS, *Editor-in-Chief* . . . . . Huntington

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SINUS DISEASE IN CHILDREN *

By V. W. FISCHBACH, M.D.
Cincinnati, Ohio

DURING recent years the increased interest and study of sinus infection in infants and children has uncovered some very enlightening observations and helpful facts. It would be very difficult to divorce completely one's study of sinus infected children from a similar condition in an adult, the reason being that the development of chronic sinus infection in adults is simply an advanced stage of that which happens repeatedly in the infant. We have learned to look upon the sinus problem as a composite picture, beginning the day one is born, or soon thereafter, up until the time he presents himself for diagnosis. I will have to refer to observations and findings occurring in the adult, which we have found through careful history taking to have had their primary inception in the same patient as an infant. This may be better illustrated in the following observation.

A careful study of our records over the past years, of chronic sinus cases occurring in adults, has presented in 65 per cent of the cases a definite history of repeated, acute head infections as an infant, and extending through early childhood. We have in common vernacular called this the "runny nose." I do not think it will be necessary for me to describe this condition more, as we all realize what this picture presents. In the remaining 35 per cent of our cases, we have found contributory causes, of which we will speak later, that were acting in infancy, as well as in adult life, leading to repeated nasal infections. Namely, because of these facts, we have felt the urgency of more careful and thorough understanding of proper diagnosis of nasal sinus disease in children. It has been a revelation to find how frequently children go through their early years with an unmistakable nasal condition, presenting these early changes of sinusitis, which are never recognized.

It may be well at this point to call attention to the fact that a child is born with a very definite antrum cavity, and also sphenoid formation. The ethmoid space is always invaginated, and very frequently cellular at birth. The full development of the ethmoid capsule and frontal cavity follows usually in the first to third year, and the latter may be as late as the twelfth year. It is, therefore, the prime object of this paper to emphasize the importance of careful and thorough nasal sinus study in all cases of children's disease, where either local or general manifestations point to head involvement. My secondary object will be to relate some practical methods, which experience has given us, to handle such cases.

* Read before West Virginia State Medical Association, June 23, 1932, at Parkersburg.

The first group, which I believe presents the greatest number of cases, includes the children in which a tonsil and adenoid operation has been advised for the relief of frequent sore throats and head colds, without further nasal study. I know many of you have seen these cases, where the operation has been performed with utmost skill and perfect result in so far as the complete removal of the tonsil and adenoid lymphatic tissue is concerned, yet the parents consult you, stating that the child still has sore throat, with frequent colds, and probably more nasal discharge with the colds than previously. This picture alone points a guilty finger to the one who has been lacking in proper pre-operative nasal study. When these cases are examined, and we find the tonsillar fossæ clean and smooth, and with a laryngeal mirror the adenoid space clean, except for marked follicular hypertrophy and redness, beginning in the naso-pharynx and extending down the posterior wall, particularly the lateral folds, we should immediately have it suggested to carry out a complete and thorough nasal diagnosis. A child may have a pharyngitis, which is entirely secondary to a nasal sinus infection, or it may be a primary infection, which will soon spread down into the bronchial tree, or upward into the nasal membrane.

A second group presents the ear cases, both of tubal character and otitis media, particularly those having repeated attacks of acute, purulent middle ear abscess, or even those having chronic middle ear discharge. We again find in most all of these cases the tonsils and adenoids to have been removed without much consideration given to the nasal condition. I believe the frequency of infection carried to the middle ear by way of the eustachian tube is a well established fact, and we readily realize the constant drainage posteriorally can by this route involve the middle ear.

The third group of cases are those in which the pediatricians and general practitioners have been treating a bronchial infection, in which they realize the primary source is in the upper respiratory tracts. The secondary condition of lower respiratory infection to upper has been well established by repeated workers and clinical observation.

In the last and more varied group are those cases presenting toxemia or septicemia, resulting from a sinus infection, the latter acting as a focus. The complications which may accompany these cases often vary from an arthritis to nephritis. We also have found certain mental deficiencies resulting from a nasal infection.

The etiology of nasal sinus disease is primarily considered to be bacterial in origin. We feel, however, that there are many contributing conditions which play such an important factor in predisposing to nasal infection, that their complete and thorough study and removal must be carefully gone into. I should first like to call attention to the exciting causes of acute head colds, and discuss a few of these, the more important being exposure to temperature changes and improper protection in the form of insufficient dress, fatigue produced by the lack of proper rest and over-physical and mental exercise during the day, alkalinity, and proper bathing time. Extensive experimentation has been carried out, in which prolonged exposures to lowered temperature changes produced a lowering of the body temperature and low metabolic chemical changes. By these findings we can understand the necessity of sufficient clothing, particularly in the colder months, and also the necessity of regulating bathing time, so that the patient is not exposed to these temperature changes when there may be considerable moisture on the surface of the body. Many of these low resistance cases can not stand bathing immediately previous to going out into the air. This also holds true for night exposures. Particularly at this time of the year we find that at retiring time the temperature is quite warm. Very little covering is used and the windows are thrown wide open. During the night the temperature may be suddenly lowered, with the patient sleeping, having a slight coating of perspiration upon the body, and with the windows

open, the cold drafts complete the exciting cause.

I am sure all of you have had your attention called to the frequency of infections developing in travelers using Pullmans at night. In our experience the exposure in lower berths is such that we recommend for cases suffering with repeated head infections upper berth traveling, and the advisability of this has been borne out in the diminishing of attacks of acute head infection. Fatigue, which is due to the lack of sufficient sleep, or fatigue resulting from excessive muscular and mental activity, certainly predispose to susceptibility, I would like to recommend that our histories carefully elicit the state of fatigue previous to the onset of the acute condition. It will be surprising how often a child may be overexerted, either muscularly or mentally, one, two or three days previous to an acute head infection.

The subject of alkalinity has been well studied, particularly in relation to resistive powers of the body to any type of invading organism.

We know that all of the above exciting causes are correlated in that excessive exposure or fatigue produces immediately high hydrogen-ion content of the blood, or acidosis.

The contributory conditions found in sinus infected children may be classified into four groups:

(1) Focal infection.
(2) Allergy.
(3) Dietary.
(4) Contact with chronic infection.

In the first group we will find those cases of chronic infected tonsils and adenoids, which lead to general lowered resistance and frequent, acute nasal infection. It is this type of case which should be thoroughly studied in regard to the nasal diagnosis and prognosis before advising the necessary tonsil and adenoid removal. The parents of these children should be thoroughly informed that the tonsil and adenoid removal is absolutely compulsory, in order to permit of possible therapeutic care of the nasal sinus infection. They should also be informed of the very careful protection of these children after tonsil removal, and also the length of time required to clear up the sinus, which is showing evidence of subacute or early chronic change. Any infection in these children, which may act as a focus, must be remedied, namely, bad gums and teeth, and possible intestinal disturbance, such as chronic appendicitis, or constipation.

The second, or allergic group of cases, have during very recent years presented an interesting subject for research. It has only been in the past few years that the realization of an allergic reaction occurring in adults may have been present since infancy. Also that this same allergic reaction in infancy can produce repeated reactions, which sooner or later lead to secondary bacterial infection of the nasal sinuses. We have all seen the familiar hay fever and rose fever patients, with the usual marked edematous membrane highly congested, which often shows no bacterial invasion, as demonstrated by complete cure as soon as the pollen is removed from the air. On the other hand, we have seen hay fever patients, who after five or six or more years of attacks soon complain of the condition persisting, even after the hay fever season is over. If we study these latter cases closely between seasonal attacks, we find that a low grade chronic sinus infection is occurring, which demands care and attention other than that given during hay fever attack. In the past five years we have had quite a number of children undergoing the same secondary change as pictured above. Seasonal attacks of one kind or another soon give way to a secondary bacterial invasion, and the child is headed for all the results of a chronic nasal infection. Many of these children develop a similar allergic reaction to the organisms causing their infection. We believe that desensitization to bacterial protein is exactly the same as to the pollen protein found in seasonal attacks. We are now carrying our allergic studies further in sinus infected children, and can safely say that a certain percentage of these cases present definite allergic reactions to certain foods, and to a lesser degree other

foreign proteins, such as dust, pyrethrum and fungus proteins.

(3)Dietary group. Much has been written pro and con regarding dietary correction, particularly in children. The tendency a few years ago was to swing entirely toward the low carbohydrates and high vitamin containing diet; but just a few months ago Dr. Hess, of New York, read a paper in which he proved that a definite conclusion of beneficial nature regarding vitamin feeding of sinus infected children and in concomitant diseases could not be drawn. Dr. Hess was the original worker in the study of vitamin content, particularly in children, and has made a very broad and searching study of this problem. The doctor was able to take a large series of cases over a period of several years, and divide the groups into high vitamin feedings and low vitamin feedings, and study the percentage developing acute nasal infection. At certain times of the year the percentage in the two groups would be the same, while at other times one or the other group would present a slightly more apparent resistance to acute catarrhal conditions. This rather upset most of our ideas, particularly in regard to vitamins D and A. The vitamin A found in butter fats, and vitamin D found in all cod liver preparations has seemed in our hands to be of great benefit in the care of children developing early sinus changes, and although Dr. Hess' extensive report has a tendency to discourage our conclusions, we still feel that the percentage of improvement warrants the use of these medicaments. It has been our experience in going over the diet of these patients that most of them like certain foods, and eat these foods to the exclusion of a mixed diet, which is needed. By this I mean many children are great meat eaters, others consume great quantities of potatoes, while others live practically on milk. All of these are good foods, but we believe that a well balanced diet, including carbohydrates, protein and fat in normal relation, with sufficient intake of vitamin and fluids gives the most beneficial regimen in diet. It is surprising when we see a child that consumes a quart to two quarts of milk a day, and not eating much of the mixed green vegetables and other mixed foods, show marked change for improvement when they are permitted one or two six ounce glasses of milk a day, and forced to eat the necessary foods to give the balance mentioned above. I believe that a little common sense in the amount of consumption of any single food must be urged by the physician upon the parent, so that these children will obtain the proper mixture. We also have found that it is compulsory that the meal time be regular, with no eating between meals. Quite frequently we experience overweighted children showing definite hypopituitary and thyroid disturbance developing severe nasal infections. In these cases it is only a sensible deduction that a low carbohydrate and fat diet is indicated until proper regulation of these endocrine glands can be established through indicated therapy. It is in this type of case that the low carbohydrate and fat intake gives very marked and immediate improvement to the nasal condition.

The fourth and last contributing cause is the contact with chronic infections. In recent years the occurrence has been so frequent, in which children developing repeated acute nasal infections, come from a household in which some one of the family is carrying a chronic nasal sinus infection, that we have made it a routine in history taking to go into the family history of head conditions very carefully. Given a child in a predisposed condition for acute nasal sinusitis, and then add the contact with low grade chronic organisms, we can readily realize how repeated attacks take place, even with the utmost care and precision in both local and general treatment of these children. A parent with a discharging nasal sinusitis can transmit, in so many ways in the home, this infection to the child, that it takes a detailed instruction in order to stop this continued form of reinfection. The most common place of contact, of course, is found in the bathroom, the towels, both hand and face towels, and the wash bowl, where running water is not used continually while bathing; in the dishes, and in sneezing and

coughing without covering the mouth, not keeping the hands clean when having them come in contact with the face or nose. We have even gone so far as to recommend a careful nasal study of both parents, where a child is developing repeated attacks of acute infection, the contributing cause of which can not be uncovered.

The symptoms of sinus disease in children do not vary from those in adults, and we should always keep this clear in our minds when making a nasal and throat examination of such patient. In a child a discharging nose either of thick yellow, or greenish colored, varying to ropy gray muco-pus, should always throw us on our guard. Nasal obstruction, which during acute attacks is always more severe, and often marked pain in the ears, while examination of the tympani is negative, headaches varying in location and intensity, accompanying these acute attacks, and also in the chronic cases, is a very common occurrence. May I mention here that it happens only too often that a child complains of a headache, and too little credence is given to this symptom. Just two weeks ago I operated upon an adult, about the age of 24, suffering with typical, chronic, hyperplastic ethmo-sphenoiditis, complicated with retrobulbar neuritis, and during the taking of his history, his mother referred to the fact that this boy suffered almost continually with headaches while attending school between the age of six and eighteen. His eyes were examined repeatedly, with no relief; but no further study was made as to the cause of this child's headache. I firmly believe that the chronic change in the sinus membrane, and serious complications resulting, could have been prevented if this boy had been properly cared for at the time he was having headaches.

The symptom of sore throat often is the first in the acute attack, irrespective whether or not the tonsils are present. At this time, if we make a very careful examination nasally, we will find the pharyngeal and epipharyngeal lymphatic ring becomes very swollen and highly inflamed. Within 24-48 hours, this inflammation, if not already present in the nasal membrane, will soon occur, and unless the infection can be controled at this period, a purulent drainage from the sinuses soon follows.

The general symptoms of malaise, aching shoulders, fever and chills, cough, post-nasal hawking and expectoration, often vary widely. Examination of these children reveals in the acute cases markedly swollen turbinates, often with pus located according to the sinuses involved. The majority of these cases, however, present considerable quantities of pus along the floor of both nasal passages. Post-nasal examination may often be accomplished by carefully obtaining the confidence of the patient, and by using a very small laryngeal mirror. Very pathognomonic changes, particularly in the ends of the turbinates, in the form of a hypertrophied condition, and also the aforementioned changes in the lymphatics of the epipharynx and pharynx may be found. Cervical adenopothy is often evident to palpation, if not to the eye. In chronic cases we look for turbinal hyperplasia and displacement. The former is found most often in the middle portion and posterior ends of the inferior turbinates. With very slight cocain shrinkage this definite hyperplasia is more demonstrable. We will frequently find a large bulla ethmoidalis displacing the middle turbinate medianly. Again, posterior rhinoscopy often helps to locate the small or large masses of chronic muco-pus, which is usually very glary and located in relation to the middle or inferior turbinates, according to the sinuses involved.

At this point I should like to call attention to the nasal examination of the allergic cases, in which we do not find marked hyperplasia, but simply vaso-motor changes of the membranes, with marked edema and no pus. Shrinkage under cocain or adrenalin will help to differentiate these cases, as well as a characteristic pale, water-logged appearance of the membrane. We have had several cases in which definite conclusions as to the differential diagnosis was so shaded that only accurate results could be obtained by isolating these children in their rooms at the hospital,

and more recently the method of air washing has been of considerable benefit.

The handling of very acute sinus infection demands plenty of patience in the patient, specialist and nurse. Every effort should be directed toward as rapid a control and cure of the acute inflammatory condition as is possible. The use of all the well known forms of treatment, such as nasal shrinkage and douching, hot or cold application as indicated, bed rest, small doses of some antipyretic, diaphoresis, alkalinization and catharsis should all be carefully ministered. In addition, these patients must be guarded against drafts, particularly at night. We find that this is best accomplished by advising the parents to ventilate the room by lowering the window from the top, rather than raising from the bottom. The door in the bedroom should also be closed, to prevent the creation of draft. In real cold weather, advise against these children sleeping in bedrooms colder than 45-50 degrees. Fresh, mildly cool air is the best for nocturnal use. After the acute symptoms subside slightly, we then begin the use of ultra-violet irradiation, both intranasally and externally. Particularly in the winter we recommend the use of this form of treatment in the home. Many inexpensive and very efficient carbon arc lamps are being made all over the country at the present time, and the financial obligation is not too great in order for patients to have the lights in their home. In many of the severe-acute attacks, we have found that a properly prepared autogenous vaccine is very beneficial to the cure of that particular attack. Immunity, however, is not established against any organism, with the exception of the one which is usually found in pure culture in an acute nasal sinusitis. We have had cases where during the winter months children have had two, three and as high as five severe and distinct acute, purulent sinusitis attacks, in which each time a different organism is found, but in which an autogenous vaccine was beneficial in bringing about convalescence. This will naturally bring up the subject of vaccines as a prophylactic form of treatment. Much has been written pro and con upon this subject, and I believe this form of treatment has been greatly abused by many not understanding the thoroughness with which this form of therapy has to be administered.

After several years of studying the bacteriological phase of acute nasal sinusitis, it has been determined in and about Cincinnati that there are as a rule fifteen to sixteen organisms prevalent to which anyone living in this community must develop immunity. Pure strain cultures of these organisms have been obtained, and a carefully prepared vaccine of the mixture of all these has, indeed, been of great benefit in producing immunization. The injections must be started very low, and not given in two or three large doses, but in varying amounts, between ten and twenty. Dosage must be increased gradually, so that the reaction is never great, as the latter is always detrimental. We have found that by starting these injections the middle of September or the first of October, many of these children, as well as adults, have been carried over the winter with very little acute head infection. Very often the immunity begins to lessen along in the month of March, and a few injections given at this time will tide the patient over until the summer months.

Before going further, I would like to say at this point that we bend every effort possible to prevent acute attacks, and when acute attacks do develop, relieve them as quickly as possible, as each carries a certain element of danger toward subacute or chronic sinus changes. Simply to treat an acute attack, and not follow the case further, would be an injustice to our patients. Many of these sinuses need careful treatment for weeks after, in order to prevent a subacute or ultimate chronic development later. In many of the severe, acute attacks, involving mostly the antrum sinuses, we ask our patients to report to us a month or six weeks after apparent normal sinus condition returns, in order to be positive that no retained secretion or undiscovered subacute condition has been overlooked. In these cases having repeated attacks of acute infection, the parents are instructed

that the earliest symptoms develop usually the first 12-24 hours; and abortive measures may be successful if taken at that time. The earliest symptoms may only be a slight sniffling, or slight rawness in the throat, headache, or lassitude. The minute this develops a very thorough treatment and 24 hours of bed rest and all the above mentioned treatment will in the majority of cases abort the development of a catarrhal or purulent stage of the cold.

Surgical intervention of acute conditions is rarely necessary. The only indication for such would be a serious complication, such as an orbital abscess developing from ethmoid or frontal condition, obstruction of the antra, with excessive pain and edema or frontal condition, obstruction of the antra, with excessive pain and edema of the face, and thorough intranasal shrinkage treatment failing to drain the sinus. Any evidence of meningeal irritation, or ocular complication, would also indicate the possible necessity for surgical drainage of the sinuses involved.

The care of the chronic cases demands even more patience and time than that given to the acutely infected child. It is our opinion that one of the first requisites for the proper handling of chronic sinusitis in a child is to inform the parents that the cure of these membranes can not be accomplished in a week or two, but often two or three and even five years of constant watching and care on the part of both the doctor and the parents are necessary. The only hope of curing such pathological changes in a sinus membrane is to give nature that opportunity, by keeping the child's resistance up to a maximum and preventing as much as possible the acute inflammatory changes, which always add to a certain degree to the chronicity. If a child presents a definite thickening of the membrane to even polypoid change, but is given the proper number of summer periods and winter periods, the latter being practically free of colds, we have found that cellular absorption takes place, with return of practically normal membrane. It is in this type of case that we insist upon ultra-violet irriadiation during the winter months, when we know that the sun's ultra-violet filtration to earth is the minimum. Prophylactic vaccines every fall, general constitutional correction, properly balanced diet, and in the winter the shrinkage of the nasal membrane with one of the ephedrine inhalant compounds, should all be insisted upon. The turbinates of these children always present a turgescent stage, and with improper aeration the nasal passages are very apt to develop tension changes, which lend toward bacterial growth. Many of these children present a rather under-weighted type, with little appetite and constipation. Many of these, when given small doses of thyroid and calcium, will show rapid improvement. We always feel safer if these children present a neutral or alkalin urine reaction, and try to maintain this by whatever method is easiest for the child. This may often be done with citrus fruits, along with small doses of any of the alkalinizing salts which may be palatable to the child. We also insist that these children drink large quantities of water, as most of them do not and have had low water intake.

Of course, where there may be an allergic element in a child developing chronic changes, we make a complete study by intradermal testing. This involves a very complicated number of tests, but often is gratifying in that a rapid improvement occurs when sensitization is relieved.

Surgical care of these cases varies from very simple procedures to highly complicated ones. A rule which we use, always variable to exceptions, is to lavage an antrum when not responding in three or four weeks to intensive medical treatment. Medication then may be used into the cavity, according to the type of organism found. The surgical removal of the tonsils and adenoids between acute attacks is an essential in our opinion in the early chronic sinusitis cases as it is in cases of nephritis, where focal infection must always be removed. When definite chronic changes have been established in the sinuses, which are the cause of a systemic disturbance, or serious local complication, a major sur-

gical drainage of the sinuses must be performed. As a rule, intranasal antrum operation, with uncapping of the ethmoids, usually accomplishes our ends. Occasionally in children who present a fully developed ethmoid capsule, all of the cell structures must be exenterated, as well as opening the sphenoid. More rarely is it compulsory to perform radical operations upon the antra or frontal sinuses, and the latter only in case of possible extension intracranially, or intraorbitally. Where such operations, either of minor or major nature, have to be performed, we again inform the parents of the continued length of time necessary for treatment and observation in order to obtain a complete cure. Many people believe that a nasal operative result should be immediate, and often a panacea for all their illness, whereas it may be two or three years before the desired result is possible. I should like to add that all these cases are warned time and time again of the danger of excessive fatigue, lack of rest, lack of sunlight, and particularly the contact infection at home, where improper home hygiene, or even no hygiene, is carried out.

In conclusion, I should like to emphasize:

1. The importance of careful nasal diagnosis in all cases of children suffering with diseased tonsils and adenoids.
2. The relationship of diseased tonsils and adenoids to nasal sinusitis.
3. The prolonged time element in the treatment of children suffering with nasal sinusitis.
4. The vast majority of sinus infected children respond to medical care, rather than surgical.
5. The prophylaxis of chronic nasal sinusitis in adults is better undertaken in the care of these patients during childhood. I believe the future holds much for us along this line, if we can cure and prevent further sinus disease when it develops in early life.

EXCRETORY UROGRAPHY *

By BERNARD H. NICHOLS, M. D.
Cleveland Clinic, Cleveland, Ohio

THE rapidly increasing use of excretory urography has prompted me to select this subject for my part of this program. The simplicity and safety of the intravenous injection of certain iodide compounds which are excreted almost entirely by the kidney has disseminated this practice into the field of urinary diagnosis to such an extent that urograms are made by this procedure in most localities where roentgen-ray equipment is available. General practitioners in greatly increasing numbers are making use of this method.

The use of intravenous urography by general practitioners certainly should not be discouraged, for much valuable diagnostic information may be obtained in this manner which heretofore has been available only to the urologist and consequently only to a limited number of patients. With the increased use of this method of investigation, however, goes a great responsibility which must not be ignored and this is the interpretation of the urographic findings.

Before discussing this phase of excretory urography I should like first to review briefly the preliminary work in this field.

History.—The development of the selectan group of drugs has been followed for several years by Professor Arthur Binz of Berlin. Having found that some of these drugs were excreted by the kidney it was hoped that some of them might have value in roentgenographic diagnosis. While working in von Lichtenberg's laboratory, Dr. Swick of New York finally developed one of the group which showed a minimum of toxic activity. This drug was called uro-selectan and proved to

* Read before West Virginia State Medical Association, June 22, 1932, at Parkersburg

be of practical use in the roentgenographic diagnosis of kidney lesions. Since then other compounds such as skiodan and neo-iopax have been developed with progressive improvement in the results obtained.

The principle involved in the use of these compounds is excretion of iodide by the kidney in a concentration of about five to six per cent. This, then, provides the maximum density of shadow and larger quantities of material, or compounds with a greater iodine content do not increase the density of the urographic shadow. Hence it is necessary to learn to interpret the shadow densities from this six per cent solution as a guide to function. These shadows of necessity must be much less dense than those obtained by direct injection of sodium iodide into the ureter. The urogram of iodide excretion, however, represents not only the anatomic deviation as shown by the instrumental pyelogram but also the physiologic aspect of the case under investigation. This is a marked advance over any method heretofore attainable and with careful interpretation much valuable information may be accurately determined.

Pyelograms made by means of intravenous urography are devoid of artefacts. These are often present in the ordinary pyelogram either because of incomplete filling or over-distention of the kidney pelvis, which may easily simulate a moderate hydronephrosis in a perfectly normal kidney or a deformity such as would be present with tumor or infection. Hence the final diagnosis in such instances must rest entirely with the clinical history and findings and the pyelogram contributes little save confusion of the true picture.

To avoid such erroneous findings, all interference with activity of the urinary tract should be avoided. When excretory urography is being done, compression bags, a distended bladder, or mechanical interference with ureteral drainage should be eliminated, thus allowing normal functional activity for the patient being examined. Any deviation from this procedure may give rise to false interpretation of the urographic findings. Opinion on urologic films made by this method should be guarded unless all the conditions under which the examination was made, are known.

Indications.—This method of investigation may be considered as indicated in any case in which pyelography of any type is necessary to aid in the diagnosis of urinary disease. In addition, there are special indications for this method of examination, in all those cases in which cystoscopic examination is impossible or extremely difficult, as in cases of tuberculosis of the bladder, of vesicle hemorrhage, of prostatic obstruction, of bladder tumor, of active infection, of urethral stricture or deformities, and in children and patients who can not tolerate cystoscopy. Intravenous urography is indicated also in cases of ruptured kidney, of ruptured bladder, of transplanted ureters, of ureteral obstruction due to stone or stricture and in severe urinary infection. This method also provides bilateral pyelograms. Perhaps its greatest use in cases in which pyelography can be done is to check the findings for comparison; the former shows only the presence of anatomic deviations from normal while the excretory urogram discloses the anatomic picture of the kidney under normal functional conditions together with the undistorted dynamics of the organ. A definite illustration of this may be seen in the case of a ptosed kidney in which a pyelogram done by catheterization of the ureter shows perhaps a little over-distention of the pelvis and raises the question as to whether or not the patient's pain may be due to hydronephrosis of moderate degree. Excretory urography in such a case, when there is no hydronephrosis, shows the pelvis of both kidneys and comparison reveals no dilatation of the renal pelvis being investigated.

Renal Function.—The determination of renal function by this method, however, must take into consideration the possibility of inhibitory secretion which may be present in many cases where no pyelographic shadow is seen, particularly on one side. From this finding, a diagnosis of non-function or absence of a kidney should not be concluded. However, when the iodine compound appears on

both sides, bilateral function is certain and observation of the successive films gives a clear idea as to the degree of function on each side. Obstructions and retention usually give rise to shadows of increased density due to accumulation of the iodide and continuation of the shadow shows the degree of obstruction. In my experience the most reliable data are obtained by excretory urograms in cases of hydronephrosis, in the identification of suspicious urinary shadows, in the determination of whether or not a kidney is normal, also in ruling out the presence of abdominal masses suspected of being connected with the kidney. And valuable information concerning renal function is obtained in a vast number of cases in which instrumental pyelography is difficult or impossible.

Roentgenologists and diagnosticians should not be discouraged in the use of this method of diagnosis of kidney lesions, but all efforts should be made to increase their interpretive acumen. If this is done, many more cases of urologic disease will reach the urologist for diagnosis and treatment and most of the difficult cases do require his aid for diagnosis and surgical opinion.

Braasch[1] has said: "I see no objection to relying on the data afforded by intravenous urography. In determining the indication for surgical treatment in most cases of hydronephrosis and renal stone, cystoscopic examination is superfluous."

Contraindications.—A marked degree of kidney deficiency with hepatic disease constitutes a definite contraindication to the use of intravenous urography. Due to excretory deficiency, no shadow is found in the kidneys in such cases. The use of this method has been stated to be contraindicated in pregnant women. Dr. Paul Schumacker[2] reported the study by intravenous urography of one hundred pregnant women with frequent examinations during the period of gravidity. No untoward effects of any kind were noted. Much valuable information, however, was obtained; I report his conclusions:

1. Our knowledge of the changes in the ureters caused by pregnancy so far has been based upon more or less nonphysiological methods of examination, and, therefore, the results are not very reliable.

2. Intravenous pyelography with *uroselectan,* on the other hand, permits obtaining a true picture of the normal and pathological ureters, and is, therefore, of great value.

3. These examinations were made by means of the stereoscopic method on 100 pregnant women with the following results:

4. The ureters are normal in the first four months of the pregnancy.

5. In the fifth-sixth months the lower section of the abdominal ureter is displaced in 50 per cent of the cases by the gravid uterus, and in the seventh-eighth months in over 80 per cent of the cases.

6. The pelvic ureter is only slightly displaced by the growing uterus.

7. Beside the displacement of the abdominal ureter towards one side and toward the back, one can see that even at early pregnancy, the abdominal ureter is slightly enlarged and hypotonic.

8. This enlargement and decrease of tonus can be noticed in 100 per cent of the cases, starting with the fifth month. It increases toward the end of pregnancy and affects both ureters in 83 per cent of the cases. In 15 per cent of the cases on the left side, and in two per cent of the cases on the right side no dilatation can be noticed.

9. The abdominal ureter can be enlarged to a diameter of 2-2:5 cm. This dilatation is found in primiparous and multiparous cases.

10. We only found the pelvic ureter dilated in two cases (congenital anomaly?). In extreme dilatation of the abdominal ureter, the pelvic ureter, on account of its hyperperistalsis shows only small, interrupted fillings.

11. Formation of kinks of the ureter directly below the kidney pelvis or at the boundary of the upper and middle third of the abdominal ureter is found in pregnancy in 60 per cent and 20 per cent, respectively; that is, in 80 per cent of all of the cases, and usually in a consequence of stoppage.

12. The obstructive effect of this kink formation upon the renal flow upon the kidney pelvis is generally of small significance and can be recognized radiographically only in very marked kinking.

13. The cause of the dilatation of the ureters and the kidney pelvis is to be found in a compression of the hypotonic ureters. A compression of the ureters on the linea innominata can be observed very rarely in two per cent of the cases.

14. The fact that the right ureter is dilated more frequently and to a higher degree than the left one is a consequence of the increased compression of the right ureter by the body of the uterus, which is inclined toward the right side.

15. A change of the position of the patient can, in some cases, relieve the obstruction.

16. The form of the pelvis and position of the fetus and small displacement of the pelvic ureter have no significance upon the compression.

17. The degree of dilatation, however, shows a certain dependence upon the tonus of the uterus, since for a flabby uterus, compression is especially high.

18. In asthenia, compression of the uterus is very frequent, but extreme obstruction occurs in healthy pregnant women.

19. The decreased tonus of the ureters in pregnancy can be recognized on the pyelogram and can be proven by artificial stoppage in pregnant and non-pregnant women.

Interpretation. — Interpretation of the bladder shadow by the intravenous method of examination shows the usual diverticulum, trabeculations and definitions of tumors, as seen by the cystogram and in many instances is sufficient to establish a diagnosis.

THE URETER.—It has been said by some authors that if the urogram shows the ureter filled with the dye the presence of a diseased ureter is indicated. My experience, however, is that such an interpretation should not be placed upon this finding alone, for many normal ureters may be seen in their entire length. Partial filling, however, is the rule and if a series of films is studied, usually the entire ureter may be seen in various stages of filling. This gives a clear idea of the ureteral position and activity without distortion or artificial stimulation. Obstruction or dilatation may readily be determined and the presence of ureteral stricture usually is accurately shown by a constant filling defect in the serial films. If spasm is present, the shadow usually changes with the peristalsis of the ureter. Such an examination also gives a clear picture of the kidney above such an obstruction. Whether or not the function of the kidney is found to be normal, impaired or absent, will aid in determining whether instrumental attempts be continued for dilatation of a stricture or removal of a stone without permanent damage to the kidney. Such information can not in many instances be obtained by ureteral catheterization, as the obstruction prevents investigation beyond that point.

Anomalous ureters, particularly those showing bifurcation with only one opening in the bladder may be illustrated nicely, and also ureters with openings outside the bladder and all types of ureteral anomalies may be shown. Studies of the ureter after operative procedures, such as removal of stones, show the extent of narrowing of the ureter and also the amount of improvement in the previous kidney damage either as evidenced by the function or by diminished hydronephrosis. Studies of transplanted ureters showing the usual dilatation together with the kidney function are more satisfactory than by any other method.

THE KIDNEY.—Interpretation of the pyelogram is of much importance. The case in which there is hydronephrosis usually shows enlargement of the pelvis and calyces as in the instrumental pyelogram; but in the intravenous pyelogram the dilatation represents a true functional picture of the kidney without the possibility of over-distention or distortion often seen by instrumental examination.

The presence and location of calculi may be well demonstrated in most instances and the function of both kidneys may be ascertained at the same time.

The identity of a palpable abdominal mass may be determined by the intravenous pyelogram which shows the kidney pelvis and the kidney outline and either excludes or incriminates the kidney as the harbinger of such a mass. If the tumor is attached to this organ, its effect on the kidney may be shown.

Anomalous kidneys, with the exception of polycystic kidneys, which usually have a poor function, may well be determined with the same characteristic shadows as are seen with instrumental pyelograms.

INFECTION OF THE KIDNEY.—The interpretation of the pyelogram in cases of infection of the kidney usually is difficult. Impaired renal function, the presence of retained pus and detritus often render impossible a diagnosis by means of the intravenous pyelogram. Early destructive lesions are not recognized, in many instances, or filling defects due to poor function may be mistaken for disease.

In my experience, retrograde pyelography is indispensable in most cases of renal infection. However, in tuberculosis of the kidney, a diagnosis often can be made by an intraveneous pyelogram and comparison of the opposite side can be made, together with the demonstration of ureteral stricture so commonly accompanying tuberculous kidney. This method solves the difficulty of bilateral pyelograms and also the controversy as to whether or not a tuberculous ureter should be catheterized. Many cases may be difficult to diagnose by this method alone and in our clinic there is no hesitancy in doing a retrograde pyelogram in the presence of a tuberculous kidney if it is technically possible. However, there are cases in which the bladder involvement is so great that cystoscopic examination and catheterization can not be done and in these cases intravenous pyelography gives the only information obtainable.

KIDNEY TUMOR.—Interpretation of urograms in the presence of tumor is difficult, particularly in the early cases or those in which function is much impaired. Since tumors usually produce evidence of anatomic distortion retrograde pyelography with its sharp dense outlines, is the better procedure in the presence of a kidney tumor. Intravenous pyelography is a good initial check for suspicious cases and is often sufficient for diagnosis and is valuable in ruling out other diseases of the kidney. It is our experience that most kidney lesions require all the evidence it is possible to obtain, including a careful history, cystoscopic findings, and urinary examinations from both kidneys, so that a final opinion should be reserved until the patient has been studied by the urologist before operative treatment or surgical procedure is undertaken.

Summary.—1. Excretory urography is not a competitive method of examination, but a very valuable adjunct to other diagnostic procedures and is almost universally applicable.

2. This method determines the functional as well as the anatomic condition of the urinary tract.

3. No artificial means should be used to accentuate the shadows as this precludes the advantages of this method.

4. No greater concentration of the iodine than five or six per cent will be excreted by the kidney with a normal excretion threshold.

5. The technique of application is comparable to, and apparently may be done with no greater difficulty or danger than is encountered in the practice of intravenous cholecystography.

6. An entirely new understanding of some phases of kidney dynamics is illustrated by intravenous urography. For instance, the normally functioning kidney pelvis is almost completely filled instead of empty as was believed formerly.

7. There is a systolic and diastolic rhythm in the pelvis of the kidney.

8. The true shape and position of the ureter has been learned without distortion, and also its peristalsis with alternate narrowing and distention, thus giving a definite identity to ureteral stricture.

9. Valuable information as to the cause of hydronephrosis in pregnancy has been determined.

10. The findings of intravenous urography are most valuable in the presence of hydronephrosis and of calculi.

11. This method is not well suited to the study of infectious processes in the kidney other than tuberculosis.

12. Renal tuberculosis in its early stages is also difficult to diagnose by the intravenous pyelogram.

13. The use of this method of urography eliminates the controversy as to whether or not bilateral pyelograms should be made, and also settles the question as to whether pyelography should be attempted in the presence of renal tuberculosis.

14. The intravenous method does not yield sufficient information in most cases of renal tumor, particularly in the early stages.

15. All information possibly obtainable must be used in the diagnosis of questionable cases, including history, urinary findings, cystoscopic examination, and especially the opinion of a competent urologist.

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SUDDEN HEART DEATH *

By W. T. McCLURE, M.D.
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THE high incidence of heart disease among the average run of patients is a fact, and not a theory. A brief mental review of the total cases of serious disease, seen by any one general physician in any arbitrary period of time, will show a high proportion in the cardiovascular group.

In Ohio County, West Virginia, which includes the city of Wheeling, heart disease is the leading cause of death. In the year 1931, 917 fatal cases were reported to the health commissioner; heart disease was given as the cause 147 times, for an average of sixteen per cent. Cancer, violence and pneumonia followed in the order named, with 100, 97 and 73 cases. respectively.

Statistics from larger centers of population are equally interesting and even more convincing. In New York City, one out of every four deaths is attributed to diseases of the heart, and there were 18,000 such deaths in the year 1931. This latter figure represents an increase of twenty-five per cent in the annual rate since 1920.

It is realized that no figures quoted are 100 per cent correct; however, as a group of diseases, those of the heart ordinarily present no great difficulty in diagnosis. Present or previous infection, evidence of enlarged heart, signs of valvular damage, symptoms of decompensation, and other studies point to organic damage to the heart. Finer details may be lacking in the diagnosis of particular cases, but it is likely that the diagnosis of heart disease, in the great majority of cases, is correct, and that figures showing a wide prevalence of such diseases are, on the whole, reliable.

In the great majority of heart cases, death is a slow process. The death of a patient who suffered, for example, over a period of years from valvular heart disease of rheumatic origin, is not usually regarded as a sudden event. There is a group, however, said to comprise 2.5 per cent of all deaths, in which the signs and symptoms are more obscure, and in which death is rather sudden, and often unexpected.

In considering the subject of sudden heart death, two other diseases of sudden onset should be mentioned which are frequently confused with acute heart attacks. Of these

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apoplexy is, of course, sudden in onset, but death itself is usually not immediate. Acute dilatation of the viscera, especially the stomach, is occasionally blamed for a hasty exit, but this condition usually occurs in acute diseases, and post-operatively; and while it will, no doubt, contribute to a fatal issue there is usually plenty of warning.

In a large series of cases consulted, the relatively rare causes of sudden deaths of all kinds were rupture of the heart, emboli from areas of venous thrombosis, thymic death, and massive pulmonary hemorrhage; while the overwhelming majority were cardiac in origin, and were caused by angina pectoris and occlusion of the coronary arteries.

The two terms, angina pectoris and coronary occlusion, are used advisedly. There has been some controversy as to the identity of the two conditions; some writers believe that in classical angina pectoris, the seat of the fatal disturbance, is in the muscle fibres of the heart, combined with spasm of the aorta. Others hold that a spasmodic contraction of the walls of the coronary arteries takes place, resulting in anemia of the heart muscle and instant death. Reflex stimulation of the vagus nerve is still another explanation. It is quite evident that, in such a transient phenomenon as angina pectoris, associated with such intangibles as emotion and exertion, the exact mechanism of death is hard to observe. If such theories are true, there is little reason to look for a preëxisting anatomical background. Cases are cited in which a careful post-mortem study failed to reveal a cause of death; and further, other cases are described in which the coronary arteries are almost closed by disease in patients who never had symptoms of angina, and who died apparently of other causes. Other authorities state that sclerosis of the coronary arteries is always present and can be found if a thorough search be made. In this connection are recalled the myocardial changes and sudden death of syphilitic origin. Warthin's proof of active periarteritis of the vessels of the heart, in patients who were clinically cured of syphilis, was reached after months of study on single specimens.

An inquiry into the mechanism of sudden heart death, as observed clinically, may be profitable. According to experience, these cases will usually fall into one of three groups:

1. Those initiated by an acute pulmonary edema.
2. Those characterized by gastric pain and vomiting, with death in a few hours, or even recovery.
3. Those who die instantaneously without a death struggle.

Acute pulmonary edema is not an uncommon mode of sudden death for an old heart case. This condition is caused by increased tension in the capillaries of the lungs due to an embarrassed left ventricle, the right ventricle remaining relatively strong. There may be an added toxic factor acting on the pulmonary vessels, some metabolite, perhaps not thrown off by damaged kidneys, so often present in these cases. Gallop rhythm and left branch block (with a question mark after the "left") were observed in one patient, in the interval between attacks. Acute pulmonary edema is one of the most urgent of all medical emergencies. The intense dyspnea, the anxious expression, the ashy-gray color, the cold clammy leaking skin, present a most distressing picture to the physician. Death may occur in a few minutes. Associated with such serious myocardial damage, the patient usually does not survive two or three attacks.

In a second type of fatal heart attack, the chief symptom may be epigastric pain and vomiting, the acute indigestion of the daily newspaper. During an attack of average severity, embarrassment of the circulation is evident, as shown by cyanosis, weak pulse, distant and irregular heart sounds. The lungs may remain free of râles. Certain cases may be very mild, without pronounced symptoms, and gross changes in the circulation absent. In such cases we are liable to grave diagnostic mistakes. There may be a history of some unusual exertion or excite-

ment preceding the attack. The pain may be a mere discomfort, not referred. The patient himself will refer his trouble to windpipe, stomach and liver, or blame it on the last thing eaten. He will not be alarmed, or say he isn't, and will often discredit the suggestion that serious myocardial changes will produce such symptoms. These attacks may occur at intervals of months or years. In those cases caused by infarct, a cure may follow, because of the establishment of a collateral circulation in the damaged area. In the graver forms, death usually occurs within a few hours from a superimposed myocardial failure.

In a third type of acute heart attack, death may be so sudden as to be almost instantaneous. The death struggle may consist of a few involuntary twitchings of the muscles. Cyanosis is a prominent symptom, in fact the only one usually seen by the physician. To explain the suddenness of the event, fibrillation of the ventricles becomes highly probable. There are some reasons for reaching such a conclusion. In the first place, the worm-like fibrillary contraction of the ventricles has been seen in the experimental animal under a variety of conditions, and, in fact, was described in the dog before it was known to occur in the human. And we are taught by those experienced both in experimental and clinical medicine that the instant death seen in ventricular fibrillation, experimentally produced, resembles very much those cases of extremely sudden heart death in the human. In the second place, ventricular fibrillation has been recorded in the human heart, both as a transient phenomenon and in the dying individual. Its occurrence as a probable cause of very sudden death may even be assumed in those patients who are known to have had multiple foci of irritation in the ventricles.

This discussion has for a background a clinical experience of twenty-two cases of sudden heart death seen in a general practice during the past six years. Such a small series would hardly deserve detailed analysis, except that the lessons learned can be amply verified in studying the work of others whose experience is more extensive.

The patients were mostly old people; the oldest was eighty, the youngest thirty-five. The average age was sixty-nine years. There were thirteen males and nine females. Of these cases five died during attacks of acute pulmonary edema. Twelve deaths followed precordial or epigastric pain and vomiting, more or less prolonged. Of the remaining five cases, the most prominent feature was the suddenness of the death.

It is worthy of note that swelling of the feet, or other gross signs of chronic passive congestion, were found in no case. In twelve patients only were blood pressure readings taken previous to the attack, and of these only one showed hypertension. Cardiovascular lues usually appears in lower age groups, and most of these had reached an age at which syphilis would not be believed until proven. In three only, as it happened, the three youngest, was the blood examined, and in these cases both the clinical history and the negative Wassermann were against syphilis. It is likely that syphilis played no part in the death of any of these patients. Not one of them died in a hospital and not one came to autopsy. Angina pectoris and coronary occlusion are diseases of the home, office and street, and sudden heart death is usually observed and attended by the family or neighborhood physician.

A recent study shows that fifty per cent of all heart deaths occur in the latter decades of life, i.e., after fifty years, and fall in the arteriosclerotic group. There surely has been an absolute increase in the number of heart deaths presenting the clinical picture of angina pectoris. Physicians have shown little concern when comparing this increase with statistics of former years. Such an increase might be expected, and is merely a corollary to the general well-known proposition that the span of life has been increased and that more people live to an age when such diseases are more common. Any emphasis on the wide prevalence of this type of heart dis-

ease, by physicians, would benefit very little those who really are afflicted, and would cause needless worry in that large group who think they have heart disease. The profession should undertake no campaign for the prevention of heart disease, unless they are in a position to offer suggestions how to escape the commonest of all lesions, an obliterating endarteritis of heart and kidney. There should be no "Heart Disease Week."

EYE, EAR, NOSE AND THROAT PATHOLOGY IN CHILDREN*

By A. P. HUDGINS, M.D.
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THERE is an impression among the laity at times found even among doctors that the only thing a child need to do is consult the eye, ear, nose and throat department for his tonsils and adenoids. If these have been removed, nothing else can be done in this department. This is afar from the truth.

Little need be said here about how important it is to remove diseased tonsils and adenoids which cause obstruction. This is a well known fact—too well established at times. For in all fair mindedness one should not stop looking for pathology just because diseased tonsils are found. This is not a panacea for juvenile complainants. One may subject himself to severe and unnecessary criticism at times because of too positive a statement about the cure to be expected.

A good deal can be said on both sides of this problem. Rather severe symptoms can be caused by tonsils that are small and insignificant while tonsils that are large and imposing in their appearance may not be the pathology underlying a condition whose etiology is usually thought of in terms of tonsils.

A good illustration of this may be cited in case F. S., white female, aged nine, admitted to the hospital with chief complaint recurrent choreic attacks. About June, 1930, symptoms of nervous irritability were first noticed. Tonsillectomy was performed August, 1930, with marked improvement for a few months. No further improvement was noted, and about a year or more later symptoms became acute again. The family physician, who is very careful and thorough, concluded that it was due to a small piece of tonsillar regrowth, and he sent the patient to the hospital for the removal of tonsil tissue. On examination the pharynx was practically normal except for small nodules in the left fossa which were found to be connective tissue and not lymphatic in character. A careful history and physical examination revealed "head colds almost constantly, nasal congestion and discharge." Roentgenological examination showed cloudiness of ethmoids, anterior and posterior. An intranasal operation was done and the symptoms gradually abated. Because the tonsils were found enlarged at the first examination no further search was made for the possible source of trouble. The sinusitis had perhaps been present for a number of years and was the etiological factor throughout.

For the sake of completeness and thoroughness in discussing the subject of throat conditions in children, let us at least mention some of the symptoms and complaints which are at time caused by chronically diseased tonsils and adenoids: mouth breathing, rheumatic pains (growing pains), nasal catarrh, precordial pains, cardiac symptoms, acute otitis media, cervical adenitis, "malnutrition" (in reality a toxemia), indigestion and gastric irritation, enlargement of upper curvical glands, foul breath, anemia, general debility, chorea.

The importance of studying the defense arrangements of the upper respiratory tracts and the importance of keeping them in full activity is emphasized by observations which

* Read before the staff of the Hinton Hospital, Hinton.

show that most generalized diseases in children take origin from the respiratory tract rather than from the intestinal tract.[3]

Tuberculosis, scarlet fever, measles, articular rheumatism, nephritis, diphtheria, and cerebro-spinal meningitis ought to be thought of in this connection.

It is probable that when local resistance is lowered by hot, dusty, ill-ventilated atmospheres and during epidemics of cerebro-spinal meningitis the meningo-cocci which are found in the nasopharynx of healthy adults are communicated to the upper respiratory tracts of children.[4]

As to the relation between upper respiratory infections and appendicitis, I need only refer you to the excellent article by Dr. Joseph Brenneman. He states that there are some vague abdominal pains from this source, but actual appendicitis which requires operation is also often present, an infection from the throat flaring up an inflammation in the vermiform appendix.

Acute laryngitis: synonyms—false croup, spasmodic laryngitis. Acute laryngitis is a catarrhal inflammation of the mucous membrane of the larynx, characterized by hoarseness or aphonia and occasionally by cough. In childhood the larynx is not only absolutely smaller than in the adult but is proportionately smaller as well when we consider the development of other organs. The cartilages are softer and more yielding, the mucosa is less closely adherent to the subjacent tissues and consequently effusion and stenosis take place more readily. The lymphatic supply of the mucosa is richer, hence acute laryngitis is more likely to be attended by submucous infiltration, especially in the infraglottic region. The nervous system of the child is unstable and it appears to be particularly sensitive when the larynx is involved. In consequence of these peculiarities, inflammation of the larynx is always a serious affection in children and produces acute symptoms —dyspnea, cyanosis, and tendency to spasm— more quickly than in adults.

The symptoms sometimes give rise to what has been called false croup. The child may appear quite well during the day or may be only affected with slight cough and yet toward evening or during the night dyspnea may develop rapidly and alarming symptoms of spasm set in within a few hours. From these paroxysmal attacks the affection is often spoken of as spasmodic laryngitis. In most cases the symptoms are connected with nasopharyngeal catarrh and are partly those of laryngismus stridulus. Any decided elevation of temperature would be opposed to a diagnosis of simple laryngitis. The probability of a foreign body having entered larynx should never be overlooked. Diphtheritic laryngitis should always be uppermost in the physician's mind.

Laryngismus stridulus (spasmodic croup, spasm of the glottis, spasm of the larynx in children and the many other names by which it is called) is an alarming condition, though rarely fatal.

The paroxysms of acute dyspnea may be met with any time from the first month of life to the eighth or ninth year. The child gasps, often tossing his head and holding his throat.

A differential diagnosis must be made between this and laryngeal diphtheria. The absence of fever and hoarseness, the rapidity with which the condition subsides and free breathing between attacks are usually sufficient to distinguish between the two.

The present view as to the etiology is that of exhaustion and tissue collapse rather than spasm of the muscles. General debility is usually met with. Adenoids have been found in a large per cent of the cases.[5]

A child whose entire physical examination is negative except for cervical adenitis and gives a history of fever, loss of appetite, irritability, cough, etc., is entitled to a careful nasal examination. Acute sinusitis is more common in children than is usually thought. In infants the diagnosis may be overlooked as the symptoms of a sinusitis are frequently identical with those of an accompanying adenoid catarrh. Headache, and particularly supra-orbital pain, should direct attention to the accessory sinuses. The acute form may

develop in children especially after measles and scarlatina[1] or after various pharyngeal infections.[2]

Krieger[23] and others think that scarlet fever, measles and whooping cough are primarily nose and throat infections and if treated as such many complications would be avoided and epidemics of contagious diseases very markedly decreased.

The immediate causes of sinusitis in children are the upper respiratory infections, acute infections of childhood, such as measles, whooping cough, scarlet fever, diphtheria, and influenza. With this in mind, it is very important to examine children carefully for nasal sinus infections when the history is given that "the child never has been well since whooping cough, etc." There can be a hangover of infection which may seriously hinder convalescence and may be the cause of more serious pathology elsewhere due to the undiscovered pus as a focus.

Swimming[20] also is a possible cause of infection in sinusitis. In children, especially, pharyngitis, laryngitis, and bronchitis are often the end result of paranasal sinus infection.

Any condition that may result from a focus of infection, especially in children, may result from sinus disease. Among these conditions may be included the following: cardiopathies, rheumatic fever, chorea, nephritis, pyelitis, certain cases of cyclic vomiting, deforming periarthritis, anemia, anorexia, malnutrition, and chronic digestive disturbances, as well as many vague symptoms such as listlessness, poor appetite, underweight, and poor color.

Simpson[7] especially draws attention to the fact that even in young children when the sinuses are comparatively undeveloped, sinusitis is occasionally the sole etiological factor in some of the worst forms of joint infection.

Aland[15] cites the multiplicity of symptoms and a few of the complications of sinusitis in children.

Gatewood[6] concisely expresses in his article in the *Virginia Medical Monthly:* "Everyone who has had much experience with children can recall a case or two in which there is acute illness, with high fever, leukocytosis, vomiting, loss of appetite, and headache, in which suppurative disease of the nasal sinus is the only discoverable cause." It is the belief of many that one of the systemic manifestations of sinus infections in children is acute parenchymatous nephritis, and that when the sinuses are cleared up all evidences of nephritis promptly disappear.

Dean lists several conditions associated with sinus disease which are cleared up by removal of the sinus pathology. The interdependence between chronic multiple infectious arthritis in children, and sinusitis and absorption of bacterial protein from an infection of the sinuses and asthma in childhood is emphasized.

Every pediatrician and internist should familiarize himself with the use of the nasal speculum, using it routinely as other instruments and of diagnosis are used routinely. In the various clinics great emphasis is placed on child hygiene, and rightly so, habits, sleeping time and conditions, rest periods, recreation, diet, etc. The child speaks to the doctor and then opens his mouth for examination because they have been told of this part of the procedure. The tongue depressor has been overworked, perhaps at the expense of the nasal speculum. If there is any difficulty at all in breathing the child is immediately marked up for tonsillectomy and adenoidectomy without any examination of the nose at all. A large sign over the pediatrician's desk would help: "Has this child sinus infection?" Laurens[9] reports a case of nasal polyps in a three-weeks-old infant. And Terracol and Goetz[10] report a case of recurring polypi in a child nine years old.

The possibility of a foreign body in the nose should not be overlooked in small children when nasal symptoms are pronounced. A careful history may help, but a careful examination may be necessary and even postnasal examination.

Examination of Eyes.—A baby of about three weeks may fix one eye on an object; about six weeks, both eyes are usually fixed

on an object. If the visual acuity of the eyes is markedly unequal or if there is a serious refractive error, especially farsightedness, a squint may develop. Any injury or disease which occurs about this time is usually blamed for the squint but in reality has nothing to do with the condition. It is due to the fact that the child (about two years old) begins to look intently and at close objects. Accommodation thus causes over-convergence. Treatment should be given at this time; that is, as soon as noticed.

Constant tearing of one or both eyes should call for an examination of the lachrymal duct looking for obstruction.

Ptosis of the lid is one of the most distressing and unsatisfactory conditions to handle. It is due to birth accidents or from absence of the muscle that elevates the lids.

Phlyctenular conjunctivitis is a disease of childhood chiefly, and manifests itself in one or more small lymphoid accumulations somewhat umbilicated and surrounded by a spider-like vascular base. This condition is a local manifestation of a systemic weakness, and should be treated as potentially tuberculous.

Ophthalmia neonatorum is rapidly disappearing due to widespread educational programs as to its prevention.

Cataracts may appear as partial or complete opacity of the lens. The eyes may otherwise be healthy or there may be inflammatory changes in the fundus which would influence the visual acuity even though a successful operation for cataract were performed.

The rarer diseases of the eye should be mentioned.

Traquair[11] and Pfingst[13] report cases of glioma of the retina, and Commes[12] a case of melanosarcoma.

Multiple sclerosis with its nystagmus, transitory blindness, ocular palsies, and other ocular findings is another less frequent condition.

Examination of Auditory Apparatus.—It is usually thought the pathology of the middle ear presents a rather definite picture:—temperature, restlessness, pain (picking at the ears), and perhaps some deafness. This is the conventional group of symptoms. Treynor[16] stresses the importance of routinely examining the drums in all such infants, and further draws attention to the relation between otitis and other constitutional disturbances. "Within the last few years a class of cases has been described in which an infant, previously well, suddenly loses weight, has diarrhea of varying severity, often has vomiting and usually fever. Prostration and inanition are extreme and the mortality is high without proper treatment. Excepting in the ears, nothing of significance is found on physical examination. Most of these cases have mastoiditis, usually bilateral, without demonstrable otitis. I have the feeling that all of these cases, early in their course, would show enough involvement of the middle ear to be recognized by otoscopy." Holsclaw[18] et al., and Marriott[22] also mention particularly the relation of otitis and gastro-intestinal symptoms. It is also noticeable what a favorable turn respiratory infections and bronchitis and pneumonia take place when an infected drum is opened.

Sykes[17] reports pathological changes significant of otitis media in 81 per cent of post-mortem examinations in children under three years old.

Nor are these findings to be considered lightly. The relation between infection of the middle ear and acuity of hearing has been worked out rather carefully by Bunch and Groves.[19] According to their investigation about 19 per cent of previously existing disease of the middle ear results in appreciable diminution in hearing.

Kerrison[8] in his text states: "There is probably no one surgical procedure which has been the means of saving a larger number of lives than the judicious evacuation of pus from the tympanum through the incision of the drum membrane."

Due to the anatomical peculiarities of a child's eustachian tube, infection of the middle ear is more frequent. The tube in a child is shorter, more horizontal, the tympanum floor is slightly lower than the nasal floor, and the pharyngeal mouth is wider.

Pathological changes in the eyes, ears, nose, and throat require careful attention. Irreparable damage can be done if these changes are not looked after at the proper time. The causes of many systemic disturbances or diseases of remote organs can be traced to disease of the ear, nose, or throat, and relieved only when these pathological changes have been corrected.

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DIAGNOSIS AND TREATMENT OF SOME COMMON HEART CONDITIONS *

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HEART conditions should not be lumped under the general term of "heart disease," since this term has for most of us an ominous sound. Many heart conditions are perfectly benign, are due to some condition outside of the heart and are due to no demonstrable pathology in the heart itself. On the other hand, some heart conditions are misinterpreted and are attributed to disease in the stomach, kidneys or alimentary tract.

Probably the commonest heart conditions are the arrythmias. They are due to beats which arise from some focus or foci other than the normal pacemaker in the sino-auricular node. In auricular extrasystole the extra beat occurs soon after a regular beat and is followed by a long pause. The patient may not be aware of its occurrence or it may worry him and yet occur in a perfectly normal heart. Curiously, such extra beats occur when the patient is quiet and disappear when the heart is accelerated. Occurring with palpitation they suggest paroxysmal auricular tachycardia. Frequent extrasystoles occurring in a case of mitral stenosis may indicate oncoming auricular fibrillation. Small doses of digitalis will often stop them.

Ventricular extrasystoles are apt to be more noticed by the patient. The extrasystole is felt as a weak impulse, the pause following it is long and the next normal beat is unusually forcible and is felt by the patient as a thump. The extrasystole can always be heard over the heart but may fail to reach

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the wrist or the blood pressure cuff. These extrasystoles are also most common when the heart rate is slow, and if they are found when the heart rate is over one hundred and ten it indicates a diseased heart muscle. They can be abolished by digitalis. They can be caused by large doses of digitalis, hence it is always important when going over a heart condition to inquire whether digitalis has been given and how much.

Treatment—There is no specific treatment. Small doses of digitalis should be tried. Sedatives such as bromides often help. Focal infection should be looked for in the teeth, nasal sinuses, tonsils, urinary and alimentary tracts and treated, if present. Coffee, tea, tobacco and alcohol may have to be limited or stopped. Many cases will be relieved if overloading the stomach is stopped.

Prognosis.—Extrasystoles may be found in apparently normal hearts. When they occur during rates of 110 or over, diseased heart muscles is probable. If they occur in hypertension, mitral stenosis, or aortic disease they indicate weakening heart muscles. They may initiate oncoming auricular fibrillation.

Paroxysmal Tachycardia.—This is a tachycardia which begins suddenly and ends suddenly, thus differing from all other tachycardias. The attack may last minutes, hours or days. I have a record in which the attack lasted for just five rapid heart beats. During the attack the rate may be anything between 150 and 200. Whatever the rate it is maintained as long as the attack lasts and can not be changed by rest, effort or drugs. The first beat is premature and all succeeding beats during the attack arise from an ectopic focus; the last beat is followed by a pause, and normal rhythm is established. Its onset is freakish and it may occur at any age and in about two-thirds of the cases no cause can be found. The symptoms are due to the fact that the output of the heart is diminished in spite of the rapid rate. The venous blood shows an increased amount of carbon dioxide and if the rapid rate continues long enough the circulation shows signs of failure (edema, etc.).

During the attack the blood pressure drops. Some patients can keep up and about, others are prostrated. The chief complaints are palpitation, a sense of suffocation, and a varying limitation of physical effort. Giddiness, blindness, and syncope may occur. In a favorable case the attack suddenly stops and the patient is soon restored to his former condition; if the attack is prolonged or if it occurs in a heart already diseased, signs of heart failure appear, such as cyanosis and edema; but these, as a rule, clear up rapidly with the ending of the attack.

Treatment.—Pressure on the eyeballs or pressure on the vagus nerve in the neck to the point of producing actual pain may cut short the attack. Holding the breath as long as possible, compressing the abdomen, or doubling up the body may have the same effect. Digitalis may be used in full doses in prolonged cases. In emergencies strophanthin may be given intravenously grain 1/150. Quinidine sulphate may be tried, grains 5 every four to six hours. Calcium gluconate may be given intravenously. After an attack, especially if the heart is normal, measures may be taken to prevent, if possible, future attacks. These consist of the interdiction of tea and coffee, tobacco and alcohol, the treatment of foci of infection, and the avoidance of gastric distention by careful attention to the diet. Digitalis may be tried as a preventive. Quinidin, grains 12 to 20, may be given daily, in divided doses and may be discontinued after several months if no attacks have occurred. Frequently all that can or need be done is to put the patient to bed and use sedatives until the attack is over.

Prognosis.—In a healthy heart the attacks are not likely to do harm. Long and frequent attacks cause the heart to fail. As a rule, the attacks, no matter how alarming, pass and cause no fatality.

Auricular Fibrillation.—In this condition the heart rate is irregular both in volume and in rhythm. If the rate is counted at the apex it will be found greater than at the wrist, that is, there is a pulse deficit. The irregularity is more pronounced after exertion. In

young people sinus arrythmia may produce an irregularity but the rate becomes regular by the simple means of asking the patient to hold the breath. Extrasystoles may cause confusion with fibrillation since many do not appear at the wrist, but if one listens for a while a run of regular beats will be felt or heard and, if the irregularity is due to extrasystoles they will disappear if the heart is accelerated by exercise, but if the condition is due to fibrillation it will become even more irregular.

Auricular fibrillation may come on in paroxysms or be permanently established. It is a common result of hyperthyroidism and may disappear after thyroidectomy. It is commonly the result of mitral stenosis; it may be one of the results of hypertension or it may come as a late affair in any condition with diseased cardiac muscle. The effects of auricular fibrillation are decreased cardiac output and signs of cardiac failure, especially dyspnea.

Treatment.—If there is cardiac failure with falling blood pressure, dyspnea, edema, etc., digitalis should be used. The action of digitalis in fibrillation is due to its depressant effect on the bundle of His, both directly and vagal, so that the number of impulses transmitted to the ventricle is diminished and the ventricular rate is slowed. This slowing of the ventricle permits a longer diastole, the ventricles are better filled, and the circulation benefits through a greater cardiac output. Digitalis should not be pushed to bring the heart rate (apex count) lower than 70 or 80. If pushed to 40 heart block may be produced.

Method of Giving Digitalis.—A standardized powdered leaf or tincture should be used. The leaf is standardized so that 100 mg. equals one cat unit and it has been found that 0.15 of a cat unit per pound of body weight is necessary for full digitalization. If a patient weighs 140 pounds he will require 140 times 0.15 or 21.1 cat units, and as one cat unit is equal to 100 mg., this will amount to 2.1 grams or 32 grains. As the tincture is one-tenth the strength of the pill it would require 21.1 c.c. or 357 minims. Knowing the total amount of digitalis required it can be apportioned so as to be given in two, three or more days. If conditions are urgent and the apex rate is high, one and one-half drams may be given at once followed by thirty minims every six hours until the calculated dose has been given. If the failure is not so acute a dram may be given at once, followed by twenty minims every six hours until the total amount has been given. In this manner a patient can be saturated in three days. In many cases there is no need to be in such a hurry and the tincture may be given in conventional doses so that saturation is not reached for from five to seven days. Saturation may be reached before the calculated dose has been taken or it may need more than was calculated. If the rapid method is chosen the patient must be carefully watched and the heart rate at the apex and wrist must be counted every four hours, and if the apex rate falls to 80 the drug should be stopped. After the desired effect has been accomplished the patient can be kept digitalized by giving him one daily dose of from 12 to 18 minims of the tincture. If digitalis is given in this manner there is little danger of cumulative effect or other signs of toxicity and it will be found that patients can be maintained at full saturation for indefinite periods.

The following points may guide one in the administration of digitalis. Calculate the dose carefully and keep a careful record of the daily amounts given; count the heart rate at the apex as well as the wrist. When the rate at the apex and that at the wrist approximate the digitalis is at or near its greatest effect. If toxic symptoms, such as vomiting appear the drug should be stopped. Extrasystoles appearing for the first time point to saturation or over. Prescribe a certain amount of digitalis to be given over a certain time. I have found that one-half the cases receiving digitalis for fibrillation are overdigitalized as shown by the electrocardiograph.

Auricular Flutter.—When a patient has a regular pulse of 130 to 170 which remains constant in all positions, whether he is up or at rest, and which has persisted for over two

weeks, the condition is probably auricular flutter. An absolute diagnosis can only be made by an electrocardiogram. At intervals the pulse rate may double and, if so, the condition is certainly flutter. This condition is treated by digitalis. One dram is given, followed by twenty minims three times a day. When the rhythm becomes completely irregular, that is, when the flutter has been converted to a fibrillation, the drug is stopped and normal rhythm may return spontaneously. Flutter differs from fibrillation in one particular point. In fibrillation the impulses from the auricle are blocked off in an irregular manner, producing a totally irregular rate; in flutter the impuses from the auricle are blocked off in a regular manner, producing a regular ventricular rate. Both are evidences of diseased cardiac muscle.

Cardiac Asthma.—This is a paroxysm of intense dyspnea in which the patient struggles for more air. It is prone to attack middle-aged people who have hypertension. The attacks are especially liable to occur at night, often waking the patient from a sound sleep. The attack lasts from a few minutes to an hour. After the attack a little thick mucus, sometimes blood stained, is coughed up, or if prolonged it may terminate in pulmonary edema. During the attack only a few moist râles are heard. Such attacks are especially apt to follow a strenuous day and a careful history will reveal that the patient has been suffering with shortness of breath on exertion during the day. The treatment of cardiac asthma consists in giving one-fourth grain morphine sulphate hypodermically, which gives almost immediate relief by depressing the respiratory center.

Acute Pulmonary Edema.—This may follow an attack of cardiac asthma or may be the sudden and initial trouble. The patient becomes very restless, dyspneic, and perhaps cyanosed. There is a constant cough with a profuse pink or blood streaked and frothy sputum. The pulse is rapid and feeble and the chest is full of moist râles. Like cardiac asthma, acute pulmonary edema is an acute heart failure plus marked congestion in the pulmonary vessels. The condition is alarming but death is unusual during an attack. The treatment consists of giving morphine sulphate grain one-fourth with atropine sulphate grain one-fiftieth by hypodermic.

Modern View of the Causes of Heart Failure.—Regardless of leakage from defective valves or other causes the heart will perform its functions as long as the heart muscle (the myocardium) is sound, and the primary factor in cardiac failure is the heart muscle. The heart must be able to handle a certain amount of blood in a certain time and must keep this blood moving at a definite rate and volume. It is when the heart becomes unable to do this that signs of failure appear, dyspnea, etc. Usually heart failure, even in valvular cases, is precipitated by some unusual exertion on the part of the patient or by the onset of some abnormal rhythm, such as fibrillation. In either case the heart suddenly becomes inefficient and fails to deal with the blood that is brought to it. The muscle fibres are stretched beyond the optimum point, the heart dilates and the pressure rises behind it. When the degree of failure is equal in the right and left heart (fibrillation, exertion) the venous system will be engorged and the liver will become enlarged. If failure occurs in the left ventricle, only acute pulmonary edema results. The failure in diphtheria, acute rheumatism and pneumonia is primarily due to acute myocarditis and its muscle inefficiency. Edema does not occur in acute cases of heart failure but only in those whose circulation slows down beyond a certain point for a prolonged time. In chronic cases the edema comes on insidiously and the distressful dyspneas are mild or absent. Some cases of angina pectoris, coronary thrombosis, and ventricular fibrillation cause an acute heart failure which results in immediate and sudden death.

Signs of Cardiac Failure.—1. Dyspnea. This is the most constant and earliest sign. It is due to the slowing of the blood current which reduces the amount of oxygen in the tissues and the resultant increase of carbon dioxide stimulates the respiratory center.

2. Orthopnea. The higher the venous pressure the greater is the respiratory distress. If the venous pressure is very high the jugular veins are engorged on both sides of the neck.

3. Cardiac asthma. Acute pulmonary edema.

4. Cyanosis. Normally arterial blood contains 96 per cent oxyhemoglobin and four per cent reduced hemoglobin. When the reduced hemoglobin reaches 10 per cent or more cyanosis appears provided the patient has a normal percentage of hemoglobin; if he has only 50 per cent of hemoglobin the reduced hemoglobin would have to rise to 20 per cent to produce visible cyanosis.

5. Edema. This is due to the slowing down of the circulation owing to the inefficient heart muscle. Usually it first shows itself by the swelling of the feet, but enlargement of the liver also occurs early.

Treatment of Cardiac Failure.—The primary aim is to remove as much load as possible from the laboring heart muscle. This is accomplished, first, by rest; second, by slowing the heart rate, and third, by maintaining general nutrition with a proper diet.

1. Rest. This means absolute rest in bed. Mental repose and sleep are just as necessary as physical rest. When the dyspnea is urgent no drug is better than morphine to secure these results; if the lungs are much congested atrophine, grain one-fiftieth should be given with the morphine.

2. Digitalis. This has been discussed.

3. Digestion and Nutrition. Calomel or a saline will help to relieve the engorgement of the intestinal tract and will also get rid of some fluid. If edema is marked the total amount of fluid given in the twenty-four hours should not exceed 30 ounces or even less. The diet should be light and consist of milk, fruit juice and small amounts of carbohydrates. Later the diet may be increased by adding bread, cereal and even meat.

In some cases the edema will not disappear after the patient has been digitalized. In such cases diuretic drugs may be used along with the digitalis, or alone. Theobromine sodium-salicylate (diuretin) is given in doses of seven and one-half grains three times a day for two or three days to be resumed for a similar period ten days later. Theocin (theophylline) is more active than diuretin and may be given grains one and one-half three times a day. Like diuretin it is best given for two or three days only.

When the edema persists obstinately good results will be gotten by the intramuscular injection of one-half c.c. of salyrgan followed next day by an intravenous injection of one c.c. This will result in the excretion of a large amount of pale urine. These diuretics are safe but must be used with caution. Diuretin and therocin may cause nausea and vomiting and salyrgan may cause stomatitis (mercurial) diarrhea or colitis, with or without hemorrhage, but these results are rare. Salyrgan is much more effective if ammonium chloride, 90 grains a day, is given simultaneously, *or its equivalent acid value may be given as dilute HCl., three fluid drams a day.*

Coronary Thrombosis.—Complete closure of a coronary artery by a thrombus or an embolus results in a definite clinical syndrome which may resemble angina pectoris or simulate some upper abdominal disease (gall stone colic, intestinal obstruction, acute indigestion, etc.). The most common site of thrombosis is the descending branch of the left coronary artery. The lesion may result in sudden death, intense subternal pain, or urgent dyspnea. Pain is the most common result. It is agonizing, persistent, localized to the lower region of the sternum and often is radiated to the arm (left), neck, jaw or back. There is a sense of discomfort in the stomach area, with nausea, and vomiting may be attempted to secure relief, or soda may be taken with the idea that if gas can be expelled from the stomach, relief will follow. But the pain is persistent, the patient writhes in agony, derives no relief from nitroglycerin and little, if any, from morphine in ordinary doses. With the pain there is shock as shown by the ashen gray, drawn features and the more or less drop in blood pressure. Soon after the infarction it is common to find a slight rise in temperature, a rise in the white blood count

and albumin in the urine. The stethoscope reveals little. The rate may be but slightly accelerated and be perfectly regular. In a small number of cases a pericardial friction rub may be heard. The diagnosis must be based on the sudden onset of the substernal pain, its agonizing intensity, its radiation, its accompanying shock and fall in blood pressure, and if these leave room for doubt, an electrocardiogram will usually be decisive.

Differential Diagnosis.—An attack of angina pectoris differs from coronary thrombosis in several striking particulars. Angina pectoris comes on after physical exertion or emotional strains. Coronary thrombosis may come on at any time even during sleep. Angina pectoris is relieved in a few minutes by morphine or nitrites; coronary thrombosis lasts for hours or days and wracks the patient with agonizing pains which are but little influenced by morphine and not at all by nitrites. After an attack of angina, physical signs are absent while after a coronary attack there is always more or less shock, fall in blood pressure, fever, pericardial friction rub and signs of a failing circulation.

At times it is difficult to differentiate an acute coronary thrombosis from an acute abdominal disease, such as gall stones and perforated peptic ulcer. In such cases an electrocardiogram should always be made before operation is attempted.

Treatment.—For the relief of the pain morphine should be given in sufficient doses. Absolute physical and mental rest should be maintained. If there are signs of heart failure digitalis should be given, not otherwise. Theocalcin grains five three or four times a day or diuretin grains ten three times a day may be given to increase the circulation through the coronary arteries, but they should not be used longer than three days if no improvement ensues. After an attack, the patient should be kept in bed for at least a month and thereafter his physical life should be more or less restricted.

Prognosis.—Prolonged pain and dyspnea, signs of congestive heart failure, persistent tachycardia point to a poor prognosis. Easy control of the pain and signs of improvement in the condition soon after the attack are more favorable. Patients who survive the attack have an average expectancy of life of about fifteen months (White), but some may live as long as ten years. It is not common to have another attack of thrombosis, but one attack may be followed by attacks of angina pectoris.

Summary.—1. Many of the common heart conditions are easily diagnosed and treated by ordinary clinical means, although graphic methods such as electrocardiograms may be helpful or necessary in doubtful cases.

2. In the diagnosis of heart failure clinical symptoms are much more important than physical signs or graphic methods. The earliest symptom of cardiac failure is dyspnea and this should never be minimized but should lead to a careful study of the patient.

3. Many cases of coronary infarctions have in the past been diagnosed as attacks of "acute indigestion" but there is no longer any reason for this mistake.

4. When digitalis is given after the total amount necessary has been calculated and when the heart rate is used as a guide of its maximum effect, there will be no risk of overdosage, and small amounts of digitalis can thereafter be used daily to maintain this effect.

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SINUS COMPLICATIONS

Excluding the possibility of dangerous complications, sinusitis in itself is a painful disease from which the patient suffers severe headache and pain in the face in addition to the usual symptoms of a bad head cold. It is a disease well worth preventing by avoiding head colds, by using a mixed diet with plenty of milk, cream, butter, raw fruits and vegetables, by adding cod liver oil to the winter diet, by obtaining plenty of fresh air and sunshine and by forming good health habits in general. If sinusitis does occur, it is most wise to place oneself in the hands of a capable physician to avoid serious complications, Louis Kleinfield suggests in the March *Hygeia*.

THE TONSIL PROBLEM *

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OPINIONS on this subject vary from those who feel that tonsils should not be removed, because they were placed by God and should not be touched by man, to those who believe that every pair of tonsils is legitimate prey for the surgeon's knife. There is a middle ground between these views which time and experience have proven to be the true answer. Since the indications for tonsillar removal are well understood and are discussed at nearly every gathering of medical men, we shall confine most of our remarks to other phases of the subject.

The history of the case is most important. We have been impressed by the fact that in the patient who gives a negative throat history, but who does give a history of absorbtive symptoms such as aching over the body, acute colds, gas on the stomach, etc., upon examination we find the tonsils are small, deeply set and show marked evidence of disease. The patient often expresses surprise when told that his tonsils are badly infected and frequently remarks, "Doctor, I have not had a sore throat for fifteen years." Upon further questioning it is found that, prior to such time, he did suffer from frequent attacks of tonsillitis and is able to date the onset of the symptoms to the time when he ceased having sore throat. As previously stated, these cases usually have small, deeply set, and badly infected tonsils.

It is found a fair percentage of them have been told by some doctor they did not have tonsils or that the tonsils have sloughed out. Upon hurried examination it frequently appears as if the tonsils really have disappeared, but upon close inspection, use of the pillar retractor, and suction, the small, deeply set, infected tonsils are found. *Why should this be the case?* Following inflammation in any part of the body, fibrous or scar tissue is laid down within the tissue. As scar tissue becomes old it contracts, causing a shrinkage and deformity of the organ. Thus recurrent inflammations, mild or severe, cause the tonsils to become smaller and smaller. Not alone does the organ decrease in size but as the fibrous tissue contracts the orifice of each crypt becomes smaller and smaller until many of them are entirely closed. The crypts are now blind pockets within which the normal secretions are confined. The retained materials now undergo changes and the resultant toxins are absorbed by the blood vessels and lymphatics, causing remote absorbtive symptoms and conditions. Why the patient should cease to have sore throat at that period is not known.

On the other hand, patients, especially children, are often presented for examination and nothing can be found but a large pair of tonsils. Frequently the parents have been told by some physician or perhaps by the school nurse that the tonsils must be removed. A careful history discloses no absorbtive symptom and usually not even the symptoms of sore throat. Why should these tonsils be sacrificed? The normal tonsil in a child is large and unless it be so large as to interfere with normal respiration, deglutition, or make pressure on the eustachian tube, we feel that it is our duty to advise against any surgical interference. We are not convinced that the normal tonsil does not have some function to perform. Due to the lack of proper history taking and examination we feel that many tonsils which should be removed, are allowed to remain, and that on the other hand many normal tonsils are needlessly sacrificed, because they have committed the unpardonable sin of being large enough to be seen by the ever watchful eye of the over zealous physician or the school nurse.

After having decided that the operation is indicated, the next most important question

* Read before the West Virginia State Medical Association at Parkersburg, on June 22, 1932.

is, "When is the best and safest time to do it?". Unlike the acute appendix or the ruptured gastric ulcer this operation is rarely an emergency one. Therefore, we may postpone it until we feel that the time has arrived when the operation can be done with a minimum of risk. Too frequently we see tonsils removed during epidemics of acute respiratory disease with following complications, such as pnuemonia, mastoiditis, or lung abscess. Does it seem logical that one should operate during one of these periods when the respiratory system is more likely than not harboring a large number of virulent organisms? Should we lower the patient's resistance and at the same time open blood vessels and lympthatics so that the lurking germs may easily gain a foothold, or should we wait until such a time that we feel that there is a minimum of risk? Only your surgical conscience will answer these questions for you. We frequently see tonsils removed when the patient is suffering from an elevated temperature. Is it not best to wait until we are sure the fever is not a prodrome of an acute infection? How frequently is the operation done almost immediately after an acute attack of quinsy? One is only courting disaster when he refuses to wait a sufficient length of time for the body to build up its protective mechanisms and for the organisms to lose some of their virulence. It is true that, by waiting, you will lose a certain percentage of these cases as patients, for they will go to some other surgeon whose conscience is not so acute, and who is willing to operate at once. How much better it is to be able to go to bed with a clear conscience than to feel that, by hasty inopportune surgery, you have been the cause of suffering, illness, or even death.

It is our feeling that tonsillectomy is not a minor procedure, and that the operation should always be done where the patient may be surrounded by the best available operative and nursing facilities possible. Of course, these facilities can best be found in a well regulated and well conducted hospital. To do the operation in the home or in the doctor's office, when better facilities are available, is at least an error of judgment, and adds greatly to the surgeon's personal responsibility. One may be lulled into a feeling of false security because he has successfully performed large numbers of operations in poor surroundings, only some day to awaken with a start when he has had the misfortune to lose a case which might have been saved, had the conditions been different.

Tonsils should be removed only by those who are proficient in the examination of the throat, in the anatomy of the tonsil, and who have had sufficient surgical training to be able to meet any emergency which might arise. Unfortunately surgery of the tonsil is frequently undertaken by those who would not think of attempting any other major surgical procedure. The laity, who too often are led to believe that the operation is but a minor one, find to their sorrow that it is not devoid of danger. It makes little or no difference as to the method employed by the operating surgeon in the removal of tonsils, so long as the tonsils are completely removed with a minimum of trauma to the surrounding tissues. It is of extreme importance that all bleeding points be ligated and that the throat is dry before the patient leaves the operating room. The surgeon's responsibility does not cease as his patient is wheeled from the room but he must see that some one competent to meet any emergency remains with the patient until the latter has completely reacted from the anesthetic if an anesthetic has been used. It is also this person's duty to see that the patient is so placed in bed, that any blood or mucous which accumulates in the throat will escape by the mouth and not enter the tracheobronchial tree.

When a tonsillectomy is indicated the results of a well performed operation are, indeed, gratifying, and we find that such cases are among our most grateful patients.

Discussion

DR. M. F. PETERSEN, Charleston: The discussion I have to make is from the point of view of a pediatrician, and will leave out, therefore, consideration of the one particular type of tonsil which Dr. Hoge spoke of; the one that a man has fifteen years,

during which time he is not well. Those, I think, are never seen in children. There can be no serious disagreement among those of us interested in tonsil removal regarding the main points of Dr. Hoge's paper: namely, that the operation should be done in a hospital; that the operation should be done at a time when the throat is as free from infection as you can have it; that a careful history of the trouble of the child should be obtained; (I wish to say that a history from the family physician or pediatrician is probably much more valuable than history from the parents); that the patient following operation should have a careful convalescence of at least twenty-four hours; that the operation should be done with carefulness, and the use of proper instruments, particularly in children's throats with delicate tissues.

All those points we all believe, and there can be no serious difference of opinion on them.

But the topic of Dr. Hoge's paper is the tonsil problem, and it seems to me that the only problem worthy of any discussion of consequence about the tonsil is whether to take it out or not. It is a very difficult question to answer, and one, as Dr. Hoge has said, about which a great deal is said, with no concrete conclusions reached. It would not be possible for me to fill this gap in Dr. Hoge's discussion adequately, but I wish to call your attention to one or two rather unusual indications for tonsil removal, which I see. One of them is chronic pyelitis, a most discouraging disease in children, in many cases unresponsive to medical or other forms of therapy that we know, and, consequently, keeping the child a long ways under par. The presence of tonsils even slightly suspected in a case of chronic pyelitis should be a denite indication for their removal.

The occurrence of acute nephritis in children which does not respond to ordinary measures of diet, medicine and rest should always be examined with the idea of tonsils being a causative agent. I think here we have the one emergency situation for removal of tonsils in a child. I have frequently advocated such a measure in the presence of albumin, blood in the urine, and even temperature. And on some other occasions I have even used ether anesthesia in the removal of these tonsils with only good resulting from such an operation.

In my own practice an indication for tonsillectomy can not be accurately described. I have to leave in this way a general statement. Unless I feel pretty nearly positive that I can promise the parents of the child that after such an operation is done that the child is going to be definitely better, so that I can see it and so that they can see it, I might say 90% positive of that fact, I do not feel justified in advising the tonsils to be removed.

DR. H. V. THOMAS, Fairmont: I would like to call attention to a couple of points which I think have been overlooked in the discussion.

One I believe is of prime importance: that very often the throat condition is secondary, and looked upon as a primary condition, when, really, the infection lies above it, and is of major importance. I think in such cases, unless we have a careful history and study, we probably do harm in the removal of tonsils and adenoids by placing the patients in a sense of self-security because of the infection which lurks behind.

One other problem is that of differentiation when a man decides between a local or a general anesthesia. Sometimes I have heard men brag about being able to do tonsillectomy under local anesthesia on a child 13 to 15 years of age. I have also seen removed by local anesthesia in the forties or fifties adenoids which were the seat of serious trouble. I do not believe it wise to place our choice on a local anesthesia simply because it can be done. Certainly, if there are adenoids above, the job should be done completely. One point, also, which has not been stressed is the backward child. Those who fall behind in school age, who do not keep up with their classmates and are continuously falling behind; very often I have seen beneficial results from the simple tonsillectomy, and adenoidectomy. I believe the major importance there lies not with the tonsils but with the adenoids.

The discussion of two of the papers I listened to yesterday in this room, no thought was given, or at least expressed, from the standpoint of focal infection which very often results in kidney trouble. I remember very well one experince which I think drives the proposition home. While doing postgraduate work examination, I came in contact with a child who for three years had had albuminuria. The local physician had advised removal of the tonsils and adenoids because of the albumin. After three years time, finally the local physician prevailed. The tonsils were removed, and in a week's time the child was free from albumin.

I think it is well to call attention to the fact of the preoperative period before the child becomes subject to difficulties as a result of tonsils or adenoids.

MIGRAINE: A NEW THERAPEUTIC APPROACH

By EDWARD PODOLSKY, M.D.
Brooklyn, N. Y.

MIGRAINE is and always has been one of the most baffling of diseases brought to the attention of the general practitioner. Essentially, migraine has been defined as a recurring paroxysmal sensory disturbance conditioned on an inherent instability of the nervous system which reacts to various types of stress in a specific way. Migraine is characterized by several distinctive features; it is periodic. There is something always that sets it off. In some patients it may occur three or four times a month; in others as many times a year. The attacks are fairly regular in time.

The second great characteristic of migraine are the sensory disturbances. Headache, of course, is the most common symptom. In addition, ocular disturbances and nausea, with or without vomiting, are the usual symptoms. Paresthesia, with or without motor disturbance, is an essential part of the migraine syndrome.

Stress of some kind usually starts the attack. According to the instability of the patient the amount of stress necessary to bring on an attack depends upon either physiological or pathological factors. It may be brought on by the menses or the vexations of ordinary daily life.

In a great many cases the diagnosis is made by the patient himself. Its periodicity is the chief clue. There is always the preceding stress which brings on the attack. It may be either mental or physical. Anxieties, worries, too active cerebration, etc., are among the chief mental triggers that set off the migrainous crisis. The physical stresses may be muscular over-effort, indigestion, refractive errors, etc. It is always important to take a very thorough history and make a complete physical examination.

Once the diagnosis is established, and it is not very difficult to do so, treatment of the condition must be considered. There have been almost as many drugs advocated for this disorder as there have been physicians treating it. Morphine as usual heads the list, but its continued use is not, of course, to be countenanced. Aspirin, acetanilid, and phenacetin are the favorites of others. Various physical measures such as electrotherapy and hydrotherapy have been used. Various endocrine products such as corpus luteum have been used by others. The present author has used the majority of remedies heretofore suggested without any too startling results.

The majority of investigators now seem agreed that migraine is due essentially to a spasm and subsequent dilatation of the cerebral arterioles. If this assumption is correct, and if, further, these vascular spasms are evoked by nervous impulses reaching the cerebral vessels by the sympathetic nerves, it seems logical that drugs possessing an inhibitory effect on the sympathetic would be effective in alleviating the migraine. It was just such a thought as this that lead Tzanck[1] to treat migraine with ergotamine tartrate, a drug whose inhibitory influence on the sympathetic has been established. He treated eleven cases in which he obtained satisfactory results with ergotamine tartrate.

Similarly, Trautmann[2] treated some thirty cases of migraine, the great majority of them being associated with menstrual difficulties. He obtained relief in most of his cases, and also in certain cases it served as a prophylactic measure to abort the attack. Targhetta[3] reported a case of long standing in which good results were obtained from ergototherapy.

In view of the fact that I had hitherto obtained rather poor results with the remedies ordinarily used, I determined to evaluate the effectiveness of ergotamine tartrate in those cases of migraine coming under my observa-

tion. I report herewith seven cases of migraine and the results obtained under ergotamine tartrate. The average length of time I had these under observation was eight weeks.

1. L.A., female, age 36, housewife. Had been suffering with migrainous attacks for past ten years. Sometimes the attacks were so severe that only morphine would relieve them. Would suffer vertigo and nausea during the attack. Patient was prone to worry over trifles and excessive mental strain would invarably bring on an attack. I put the patient on ergotamine tartrate tablets, one three times a day for two weeks. Relief was obtained within 24 hours, and during period of observation was free from migraine. No recurrence at this date.

2. E.K., female, age 47, housewire. Had been suffering migraine with severe ocular disturbances for something like eighteen years with but slight relief from ordinary medication. Attacks seemed to be brought on by attacks of more or less severe indigestion, during which time patient would be entirely incapacitated. The patient was put on ergotamine tartrate one tablet three times daily. Within a week pains were entirely gone, vision improved, felt much better. The digestive disturbance is being investigated in an attempt to overcome it.

3. J.S., male, age 65. Had been suffering from "nervous and sick headaches" for twenty-three years. Came at periodic intervals for which the patient can assign no cause. Very slight relief from the ordinary remedies offered. Was put on ergotamine tartrate, one tablet, thrice daily for about two weeks. Prompt relief obtained, and at this writing patient has suffered no relapse.

4. A.K., female, age 54, housewise. Had been suffering from migraine for fifteen years. Seemed to be brought on by excessive physical effort. Nauseated at times to such an extent that she vomited. Morphine seemed to be about the only thing that would give relief and this at best was temporary. Patient was very miserable. Was put on ergotherapy with prompt relief within 24 hours. Kept on ergotamine tartrate tablets for two weeks. No relapse or recurrence has been noted up till now. Feels that the most effective relief was obtained under present form of medication.

5. A.F., male, age 43. Had been suffering from migrainous attacks for past ten years. Familial history of migraine. Came at periodic intervals and seemed to be related to gall-bladder attacks which he had been having during that time. Refused surgical intervention. Very slight relief from ordinary run of medication. Was put on ergotamine tartrate, one tablet three times daily, for one week. Relief was obtained within 30 hours. No recurrence since then. Feels that he has obtained best results under present form of therapy.

6. E.B., female, age 25. Her attacks of migraine began with onset of menses at the age of 15. Had been suffering with severe, nervous headaches for the past ten years. During migrainous crisis was nauseated, often vomiting; severe ocular disturbances. Morphine seemed to be about the only remedy which afforded relief. Patient came to me at onset of attack and was put on ergotamine tartrate at once. Was given two tablets three times daily for first day, and the usual migraine syndrome seemed to have been abolished almost at the beginning. Tablets were reduced to one three times a day, and later to one twice a day. This was maintained during her menses. Patient was apparently free from migranous attack during her present period. This confirms the experience of Trautmann who ascertained that ergotamine tartrate can act as a prophylactic against migraine associated with menstrual difficulties if given at the onset of the attack.

7. A.D., male, age 33, shoemaker by occupation. Had been having periodic attacks of migraine for past twelve years. They were brought on by attacks of indigestion. During attack patient suffered from vertigo, was extremely nauseated and vomited frequently. Slight ocular disturbances. Usual medication gave but slight relief. Was put on ergotamine tartrate, one tablet three times a day.

Marked relief obtained within 30 hours. Ergot medication was continued over a period of two weeks. Patient freely stated that he obtained the greatest relief from present form of therapy. No relapse during time of observation, and up till time of writing more than three months have passed with no recurrence. Patient has been told to take the ergotamine tablets at first sign of migranous attack. Has apparently been successful in fending off the usual crisis.

Migraine seems to be initiated by some mental or physical stimulus, and these may or may not have a pathological background. If due to some disease condition, like an inflamed gall-bladder, the diseased organ may be removed and this helps considerably. But migraine is an imbalance, and this imbalance must also be destroyed if complete success is to be attained.

It seems to be now generally agreed by many clinicians that the migrainous syndrome depends for the most part on the over-irritation of the cerebral arterioles. The most logical form of medication is that which aims to depress this over-stimulation with its consequent spasm. Ergotamine tartrate seems to be capable of accomplishing this aim.

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THE PHYSICIAN AND THE WEST VIRGINIA WHITE HOUSE CONFERENCE

By Geo. M. Lyon, M.D.
Huntington, W. Va.

Why should a physician be interested in the West Virginia White House Conference on Child Health and Protection? What can it possibly hope to accomplish?

Changing social and economic trends call for a scientific, open-minded, frank and fair consideration of child health and protection, in which we as physicians in coöperation with official and interested agencies must play an integral part in an effort to correct defects or inefficiencies and to improve present practices of child health and protection in West Virginia. This Conference is to be a common meeting ground upon which representatives of the child, the taxpayer, the physician, the State Department of Health, the Department of Free Schools, the Department of Public Welfare, and trained and lay social workers will come together in a common cause, attempting to develop in a coöperative manner programs which will be as beneficial to as many, and as detrimental to as few as possible. The furthering of child health and protection in West Virginia is an important and vital issue. That there are many knotty borderline and conflicting practices and tendencies which tend to prevent its achievement should be frankly recognized. Faulty attitudes and practices are common to all groups and to many individuals. This creates lack of harmony, discontent and jealousy rendering the achievement of worthy objectives difficult if not actually impossible.

This Conference is at the moment the one medium through which with concerted action and study we can hope to obtain helpful suggestions and practical improvement. Coöperation from official agencies has been promised to the interested professions of the state if they will assist in developing plans technically acceptable to themselves and considerate of all concerned. The professions of medicine, education and social work are being asked for technical advice to be based on an accurate, impartial and fair study of conditions in West Virginia. It becomes, therefore, a patriotic duty for the members of these professions to

render the special service to their state for which they are particularly qualified.

Few problems to be considered may be looked upon as "medical problems" in their entirety. There are other equally important, equally essential fields of endeavor. The physician, the public health worker, the educator, the social worker all represent forces for child health and protection which are fundamental and without any one of which child health and protection can not be accomplished in its optimal state. Each agency must realize the peculiar necessity of the other agencies. Appropriate appreciation of each agency for the other agency's special contribution is essential. As medical men we must be impressed with the absolute necessity of acceptable medical help if not actual guidance in much of this work. We must not let this blind us to the necessity of appreciating the value of the work of other workers.

(1) *The high infant death rate* in West Virginia needs to be studied by competent physicians, preferably by those directly in contact with West Virginia babies rather than by an out-of-the-state or "official" expert. Our Chambers of Commerce have desired an explanation of these relatively high rates. What have we physicians to offer in explanation at present? Is this high rate found in all sections of the state or not? Do we know how to assist in its reduction?

(2) *Obstetrical services in West Virginia* can profitably stand an "inventory." Dr. J. R. Bloss, long a leader in the State Medical Association and a Fellow of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, is directing the activities of this "inventory." A study of the *high neo-natal and maternal death rate* will be a part of their work. West Virginia presents an unenviable statistical rating in this phase of child health and protection. Dr. Harry Steele, Dr. B. C. John, Dr. Walter Rowley, Dr. W. W. Point, Dr. Ed. Humphrey, and Dr. Gilbert Ratcliff are collaborating with Dr. Bloss in the early plans and workings of this particular study.

(3) It is not likely *that the medical man in general is as actively interested in matters of child health and protection as his professional responsibility* includes and requires. This is something to be stimulated by our own selves from within our own ranks—rather than prodded into activity by laymen of energetic and avaricious or unintelligent intent as is not infrequently the case.

(4) *Smallpox vaccination and diphtheria immunization* are of undoubted value. The carrying on of this preventive work is an absolute responsibility of the private physician. His failure to do so can have no defense. It must be frankly admitted that not enough protection of this sort is provided by private physicians. Many physicians feel that official health agencies and some school physicians have bungled programs of immunization by working through lay groups instead of working through the local societies (the local representatives of the organized profession). A plan which will get the majority of preschool children immunized, which will foster and maintain a wholesome spirit of coöperation between the physician (as represented by his county society) and the official health departments can be worked out in this Conference, and can be put into effect.

(5) *Dental Hygiene and Dental Examination* in children in West Virginia have not received proper attention. Already interested lay organizations are initiating movements for this as they once did for the Crippled Child program. Have we as physicians and dentists a program for them when they make this request or must we refer them to untrained lay enthusiasts for their guidance?

(6) *Mental Hygiene* throughout the country is rapidly catching the active interest of amateur "psychologists," so-called "practical educators" and active lay propagandists utterly unqualified to take the lead in it. Leaders in the professions of medicine, psychology, education and social work recognize the danger of unqualified and untrained leadership in this field. Consider how authoritatively the commercial salesman speaks of vitamin units, of their activities, and of his

other therapeutic agents. Mental faddists and "lay experts" are springing up in the same manner as have the "food faddists." Medicine, not lay groups, logically should supply these leaders. We as physicians are the logical ones to prepare the program and take the lead in this great movement as our contact with the individual child and the individual home puts us in the key position to carry out such a worthy program. We have been slow to recognize our obligation, which must of necessity demand, first, a greater interest generally in mental hygiene within our own professional ranks and, second, the development of rational and workable programs for our own communities provided with capable medical assistance or leadership. Just as in nutrition so in mental hygiene, a knowledge of the demands of growth and development, a knowledge of normal and abnormal physiology and psychology, and an appreciation of clinical experience and family contact is fundamentally essential. It is necessary in any sensible program of mental hygiene to incorporate psychology of the proper and substantial type rather than let inexpert but energetic "lay psychologists" rush in, early obtain the key position and put us as physicians in a position of merited disadvantage. We may view their activities with frank misgivings, but what are we going to do about it? Dr. John Winter and Dr. Elizabeth Stalnaker of the faculty of our State University are representatives of the very best of psychological attitudes and practices and they are bringing to the Conference the valuable contributions which this important field of human study presents.

(7) *The Feebleminded and the Epileptic Child* in West Virginia needs more consideration and opportunity. Our study, in conjunction with official coöperation, should result in the accomplishment of great good here.

(8) Many individuals feel the *Crippled Child* situation in West Virginia should be carefully studied both as to present needs, and as to practices in existence in the past and present. A program should be evolved along lines acceptable to the State Medical Association, interested lay organizations, etc., due regard being paid to the child and to the taxpayer.

(9) *Hospital and Nursing Facilities* for children in West Virginia are probably better than fair. Ways and means for pointing out and providing reasonable improvement can probably be shown after a careful study is made and coöperation is intelligently sought.

(10) *Communicable Disease Control* is not at present handled to the best advantage. Just how much is the individual doctor's fault and just how much is the fault of official agencies is a matter of some consequence. A coöperative method of reporting, and caring for, can be worked out if the right attitudes prevail. The local medical society should be spokesman for the local profession in this matter. It rather than the individual physician should call to task the offending party whether, first, individual physician or, second, official agency (local, county or state). Coöperation can be established and maintained if a proper plan is presented based on fair and impartial study of the problem.

(11) Physicians are not always at fault for failure of the *vital statistic* reports to reach their proper destination. The procedure of reporting can possibly be bettered if the physicians demonstrate the need for it and request a better method, giving in the meantime their own important and essential coöperation.

(12) The tendency of *lay organizations* to desire to come into the field of child welfare and deal with problems of a medical nature without acceptable medical guidance, presents a real problem in child health and protection. It affects the physician vitally. If he does not take his place in the front line of assisting, and where needed, directing these interested lay organizations, they will soon be telling him, the physician, how to practice preventive medicine. This is a real problem, today much nearer and at present more real than "state medicine." We will soon have in our midst the lay "clinical psychologist" with his unbalanced training, and his desire to have a "clinical practice." Then there may

be the lay "physical-educationalist" who with inadequate training, lectures authoritatively on health protection, hygiene, and often curative medicine. He examines hearts, lungs, etc., for his students or gymnasium patrons. Then there are the would-be "nutritionists" who unprepared properly to do so, from the street corner, in the press and at school spread erroneous practices and ideas of physiology and nutrition. The "school physician" usually of political casting, almost always presents a problem for careful consideration. His work demands adequate supervision from his local society as to practices and procedures in order to see that nationally acceptable standards are observed. Not all laymen feel the private physician should care for the state's indigent without compensation. These problems are encountered by us every day. The solution of many of these may be near at hand if we as physicians will prepare our program and point out the way in the fields in which we logically should. Where our view points and attitudes and practices are wrong we sincerely want to correct them. We have been assured of official coöperation in the doing, by presenting an adequate program with medical leadership frequently supplied and with a reasoning but united front. A campaign of education will be effective. Shall we as physicians not try to carry on where we can in a Conference of this sort? It is a humanitarian effort characterized by the same unselfish spirit as encouraged our past President, Dr. Hoge, to carefully investigate and then to advocate an improved service for the mentally unfortunate of the state. The careful and masterful study of our present President, Dr. MacGregor, in the social and economic phases of medical practice is of the same spirit applied in a different but closely related line.

The time is ripe. The coöperation of official agencies would seem assured and we can do much if we will. It is not just my problem, nor just your problem; it is our problem, ours of the medical profession, ours to share with the professions of education and social welfare. These are problems we as parents, as citizens and as taxpayers should be interested in quite as much as in the rôle of medical expert.

(13) *Child Study Clubs, Parent Study Clubs* and the like are springing up everywhere. The physician must be prepared to provide appropriate assistance or adequate leadership to best assist the work of such groups. The medical phases of *Parent Education* and *Pre-Parent Education* are important. The physician skilled in mental disorders realizes especially the truth of this. *Pre-School Education* has its medical side and merits appropriate consideration. We are daily asked to advise with respect to it.

(14) *Kindergartens, Sunday Schools of Pre-School Grade,* etc., present medical problems not usually properly appreciated or carried out by the lay person generally.

(15) In our schools many knotty problems are present, some of which we may help to solve if, as physicians, we approach their solution coöperating with official agencies and with an open mind, thinking fairly. (a) *School medical supervision* is more or less inadequate in most communities and hardly deserves being called by that name. A workable plan can probably be evolved in which the local society is the key to the problem. (b) *Health education* in the school is not consistent. An advisory board from the State Medical Association with the State Department of Free Schools should plan the health education program for the state and make it uniform in character and consistent with acceptable medical standards. (c) *The hygiene of instruction and mental hygiene* in particular, should receive careful consideration with due regard for acceptable standards of growth and development and related physiology. (d) *Dental examination and dental hygiene* merit consideration and improvement where possible. Dental education can be properly incorporated in health education. (e) *Nursing service* in the schools of our state can profitably be studied with proper appraisement of results accomplished, etc. Is it adequate, essential and are the objectives being accomplished? (f) *Nutrition service in the schools* merits attention. Are the school lunch rooms

sanitary? Is food properly selected and prepared? Is the corner confectionery store an aid to the welfare of the school child? (g) *Safety education* is of importance. Can we help here? (h) Is *social hygiene* given its most favorable treatment or by "amateurs" instead of those with understanding and technical experience? (i) *Physical education* brings up the question of the school boy athlete and his medical supervision. Does he have an adequate physical examination for swimming, competitive games, gymnasium work, etc.? Are chest and heart examinations by other than a physician adequate? (j) The training of teacher personnel (preliminary and "in service" training) are of special importance in mental hygiene, physiology of growth and development, health protection, health education, physical education, etc. Coöperative efforts on the part of the physicians can certainly be helpful in improvement of "in service" training of personnel.

(16) The handicapped child can not be properly cared for without a sympathetic medical hand assisting in the closest of coöperation with the directing agency. These are (a) the *blind child*, (b) the *deaf child*, (c) the *crippled child*, (d) the child handicapped by the *internal conditions* consisting of congenital syphilis, tuberculosis, cardiac disease, chronic mental disorders (epilepsy, post-encephalitic disorders, etc.), anemias, and generally chronically lowered vitality (starvation, poor environment, disease, etc.), and (e) the *dependent, neglected, and delinquent child*. These deserve serious consideration. Medical help should be available to the handicapped child not only as regards general medical service but in planning for his program of rehabilitation, education and training. Especially does the delinquent child need psychometric studies by the psychologist and a proper psychiatric and medical appraisement as well.

The Conference is not proceeding with the spirit of the reformer, nor will it. Scientific, accurate and impartial will be the fact finding and the deliberations toward recommendations. Legislative and educational programs will follow the Conference, based on the findings of the Conference but not as an integral part of the present organization. That will constitute the work of the Continuation Committee which will take up where this Conference Committee stops. To be effective there must be carried on by this Committee a long-time educational program with follow-up conferences held from time to time to check-up on the progress made. Well laid plans are already laid for this continuation of activity. Should a physician be interested in such an endeavor?

MEDICAL PROGRESS IMPEDED

For centuries and ages the main or only defenses against disease were prayers, magic, incantations, sacrifices and taboos. Gods, devils and witches were associated with illness and death.

Depressing as these beliefs may be, some of the notions concerning illness which were prevalent in the sixteenth and seventeenth centuries, great centuries of renaissance and of intellectual curiosity as they were, are appalling, in the opinion of Dr. P. M. Ashburn, who begins a serial, "Progress in Preventive Medicine," in the March *Hygeia*.

Medicine was interpreted during those centuries according to Galen and the humoral theory of disease and to the Arabians and astrology. And neither the humoral theory nor the atsrology bore relation to the facts.

When William Harvey described the circulation of the blood, one of the medical leaders of his day said that if Harvey's dissections did not agree with Galen's teachings, then the nature and structure of man had changed since Galen's day, as it could not be admitted that Galen had erred.

Jenner's teaching in regard to inoculation for smallpox was so at variance with all the teaching and knowledge of the day that it encountered violent opposition from all sides and was branded as absurd and harmful. Vaccination has freed childhood today from what was its greatest menace prior to Jenner's discovery.

SOME PHASES OF CONTRACT PRACTICE *

AN OUTLINE OF SOME IMPORTANT QUESTIONS WHICH DESERVE IMMEDIATE CONSIDERATION

By R. G. LELAND, M.D.
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Criticism.—It is not known whether the owner of this hospital is being paid for these articles in a manner similar to the purchase of syndicated health columns or whether he is paying for the privilege of inserting these articles or whether the space is offered him gratis. Whatever the arrangement may be between the physician and the newspaper, the address at the close of the article makes it very easy for those who read to make no mistake as to the location of the Golden State Hospital. There might be some difference of opinion as to whether such a statement constituted advertising, but there can be little doubt that the physician who attaches both the name and address of his institution to a so-called educational article offers an easy access to personal gain.

15. *Mount Moriah Hospital Limited.*—In San Francisco, one of the contract medical plans now operating wholly under medical control, is known as the Mount Moriah Hospital Limited. This plan was originally organized for masons and masons' families only. It proved unsuccessful because of the low monthly rate charged. For the past three years it has been operated by a physician. The charges are from $2 to $3 per member per month. This plan has 6,000 members in San Francisco and 1,200 members in Alameda and Oakland. The staff consists of 22 physicians and there has recently been added to the medical contract a mutual life insurance coverage.

Criticism.—Obviously, to make available the services of only 22 physicians out of a possible total in excess of 2,300 does not constitute free choice.

16. *A So-Called Industrial Service.*—In a western city there is also a so-called service which seeks to close contracts for medical care with industrial concerns on the basis of the character of the medical staff which it employs. Many physicians whose names have been used to sell this industrial medical service claim that their names have been used without their knowledge or authority. Some of these physicians have demanded that the service discontinue such unauthorized use at once. Such a practice illustrates another of the grave menaces that may develop in certain forms of flat rate contract practice which is not controlled by the medical profession.

17. *California County Hospital.*—Throughout California serious interference with private medical practice and private hospital service has been caused by the increasing use of county hospitals which are controlled entirely by the county commissioners of the respective counties concerned. Last year in some counties more than 75 per cent of all persons hospitalized were cared for in county hospitals. Three classes of patients are recognized, full pay, part pay and free. The attending physician is allowed to care for patients who are able to pay the full medical fee. Patients who are able to pay only a portion or none of the medical fee are cared for by the county hospital medical staff whose salary is paid by the county commissioner. It is not known whether the fee paid by the part pay patient is divided between the hospital and the staff physician of the county hospital. There is great apprehension among the members of the California Medical Association lest there be an effort at the coming session of the California Legislature to open the county hospitals in California by law to the entire population without any regard as to the financial ability of the patient to pay for his medical services.

18. *Research Hospital of Kansas City,*

Mo.—From Kansas City, Mo., comes the information that the Research Hospital of that city is developing a plan for flat rate medical service.

19. *General Medical Society of Omaha.*—Information is at hand to the effect that the State Insurance Commissioner of Nebraska has approved articles of incorporation of the General Medical Society of Omaha, a company organized and incorporated to furnish medical, surgical and dental services to its policy holders in return for premiums they will pay on the assessment plan.

20. *The Better Health Institute of New Jersey.*—The advertising material of this institute states that this organization "offers the last word in protection and safety with complete medical attention, periodical dental service, sickness benefit or life insurance, at minimum expense." The rates chargs are $1.50 to $2.75 per month. This institute is operated by laymen, presumably for a profit.

21. *The Community Medical Service, Inc., of Brooklyn, N. Y.*—This service is seeking to obtain contracts with physicians for the care of the medical service's membership at a ridiculously low sum. The cost for the entire family is stated as $12.75 a year. At present no information is available as to the type of control of this service.

22. *The American Medical Insurance Society of Oklahoma City.*—This insurance society was recently organized in Oklahoma City to provide its members with services and benefits incident to accident and illness. The policy issued by this society contains the usual limitations and exclusions which make it at best, unsatisfactory as a means of providing medical care.

23. *Multnomah Industrial Health Association.*—To meet the increasing competition of contract practice and hospital associations in Oregon, the Multnomah Industrial Health Association was recently incorporated by physicians in Portland, Oregon. The association plans at first to care for industrial accident cases only. Already approximately 150 physicians have joined and have paid the purchase price of $100 for one share of stock. It is hoped that the membership in the association will reach at least 300 or 400 physicians from the members of the Multnomah County Medical Society. All county society members are eligible to membership in the health association. Many of the physicians who have already subscribed will in no wise derive benefits from the organization nor will they handle any industrial cases, but it appears from the statements of those who are organizing the project that the main object is to secure as large a group of physicians in Portland as possible in order that they may better compete with the contract groups and hospital associations already in operation. It is unfortunate but apparently inevitable that this group must use practically the same methods of securing and retaining contracts as those already in use by the hospital association and contract groups.

24. *State Industrial Accident Commission of Oregon.*—The Oregon State Industrial Accident Commission is now making direct contracts for industrial medical service with physicians, groups of physicians and hospital associations. Within the past eighteen months much dissatisfaction over the operation of the medical phase of Workmen's Compensation has developed in Oregon, largely because of the methods used and the service rendered in contract practice.

No provision is made, even by the combination of all of these schemes, for the medical care of the income class below the normal standard of living. These are still to be left to the care of private charity and county hospitals.

The outcome in other counties makes it safe to predict that as soon as this stage has arrived, there will be an irresistible demand for compulsory insurance. The pattern of this compulsory insurance will have been fixed with the insurance corporations in control and the medical profession existing only as their employees.

Continued in April Issue

COMPETITIVE COMMERCIALISM. — Reference to and description of the foregoing types of medical practice now in operation or being

developed has been made to show that so far from the practice of medicine returning to the private individual type, there are developing in all parts of the United States group and contract schemes designed to meet a popular demand for medical service at a reduced cost. The types described are intended to illustrate only the most common varieties of deviations from the private independent practice of medicine.

Because of the reduced income of many physicians, these schemes are being supported by some physicians who see in them a more constant and substantial financial return than in the private practice in which they have been engaged. In some sections of the United States, these schemes, developed along commercial lines, have set up a system of competitive commericalism which makes it almost impossible for the private individual practitioner and the recent graduate to make a living.

A study of the medical service provided by railroads, mining and oil corporations and other large interests would reveal another type of contract practice involving somewhat different factors than those described in the foregoing discussion. Although some of these forms of contract practice are recognized as altogether legitimate and ethical, it should not be inferred because an analysis and criticism of these forms of medical service have been omitted that they are entirely free from some of the criticisms and dangers found in other contract schemes.

From the foregoing it should be obvious that contract practice is being widely developed and that it may bring about a serious deterioration in the quality of medical service. The most natural question at this point is "What is the medical profession doing about it?"

EFFORTS OF MEDICAL SOCIETIES TO APPRAISE PRESENT SYSTEMS OF MEDICAL CARE AND TO SUGGEST CHANGES IF NECESSARY.—Notwithstanding an apparent general indifference on the part of medical societies toward the growing restlessness of members over these recent developments in the administration of medical care, certain state and local medical societies *are* attempting to determine the facts pertaining to the practice of medicine in their respective jurisdictions and are hoping to be able to offer suggestions or plans to correct dangerous tendencies in the medical profession itself and if necessary, offer proposals to change state statutes which govern the practice of medicine.

1. *Washington State Medical Association.*—The Washington State Medical Association in 1931, elected a medical economics committee of seven to study the types of medical practice found in Washington and to make recommendations, if possible to eliminate or improve undesirable conditions and tendencies.

At a special meeting of the House of Delegates of the Washington State Medical Association, called on April 3, 1932, this committee presented its report. Answers to the following questions were based on 825 schedules returned by physicians throughout the state and from personal observations made by members of the committee.

1. Is your practice medical, surgical, special or general?

General, 53 per cent; special, 17 per cent.

The balance report a mixed practice with "a tendency toward some specialty."

2. Location of practice?

City, 368.5 per cent; small town, 19 per cent; country, 9 per cent; suburban, 2.8 per cent, and isolated industrial, 1 per cent.

In Washington, 70 per cent of the population is in cities over 10,000. There are great stretches of sparsely settled country.

3. Are contracts prevalent in your community?

Yes, 80 per cent; do not know, 6 per cent.

Apparently contracts are in force wherever industry employs a group of workers.

4. Are you in favor of industrial contracts?

Yes, 28 per cent; no, 69 per cent.

Those approving industrial contracts invariably acknowledged practicing under this plan. Many arguments were made both for and against contracts.

5. Are you in favor of supplemental health contracts?

Yes, 15 per cent; no, 70 per cent; no opinion, 13 per cent.

6. In your opinion are contracts advantageous?

Yes, 16 per cent; no, 68 per cent.

Again, many opinions were expressed on both sides of the question.

7. Do you favor lodge practice?

No, 92 per cent.

Few physicians had anything good to say to lodge practice. Several claimed they were forced into it in small communities.

8. Do you have any contracts?

Yes, 27 per cent.

In most cases the contract portion supplemented a general practice. Some said contratcs were taken in self-defense and were not wholly approved.

9. Do you favor free choice of physicians?

Yes, under all conditions, 77 per cent; yes, under limited conditions, 21 per cent.

Many arguments were made pro and con.

10. Are you in sympathy with the complete state control of medicine?

NO EMPHATICALLY, 85 per cent; yes, 15 per cent.

The sympathetic 15 per cent were mostly the younger men just starting in practice and the aged doctors.

11. Do you favor the panel system as practiced in England?

No, 73 per cent; yes, 5 per cent.

It developed that doctors are not familiar with this system.

12. Do you favor voluntary or compulsory insurance for wage earners whose income is under $2,000 per year?

For voluntary insurance, 16 per cent; for compulsory insurance, 14 per cent.

An additional 60 per cent favored some type of insurance but were not clear as to details. Many doctors are doing a large amount of charity work much of which could be taken care of through sickness insurance.

13. Do you believe in paid solicitors or managers for doctors?

No (emphatically), 90 per cent; yes, 10 per cent.

The constructive suggestion was made that a course of economics on fees, collections and office management should be given in the medical schools.

14. Do you believe in a minimum fee for contracts set by the state?

Yes, 40 per cent; no, 40 per cent.

This would apply to the supplemental health contracts which the state at present does not officially recognize. Setting a minimum fee, it was felt, would discourage price-cutting and its consequent improverishment of medical service.

The report states that industry now has several forms of medical service from which to choose. "Some industrial plants favor the clinic service; others favor the free choice plan. Investigation shows that the workman is domineered in his choice by his employer. It is better to accept the employer's doctor than to lose his job." "The committee's investigation shows that some contracts are held by able physicians and surgeons, while others are held by men of inferior ability. So this blank statement that the results of the contract surgeons are better than the non-contract surgeons is not true."

Comment.—From the foregoing tabulation of percentages it is apparent that the physycians in Washington are not only dissatisfied with contract practice as it exists there, but they are also hazy as to the methods of modifying the present type of practice to eliminate the dangerous and undesirable features. Although they express themselves as favoring or opposed to panel systems and insurance, it appears that they are not sufficiently familiar with these systems to warrant a firm stand.

This state of familiarity, or lack of it, with respect to the experience that has accumulated in connection with various systems of medical practice elsewhere and the uncertain decision as to the necessity for some change, or the nature of the change, if it seems desirable, emphasizes the need for careful and exhaustive study everywhere of the present status of medical practice before any new system can properly be promoted.

The Washington State Medical Association has decided, from the information assembled by its committee of seven elected to study medical economic questions, that the first attempt to improve the status of medical practice in that state was to change the medical practice act and the medical aid law of that state. Accordingly, a new medical practice act and modifications of the medical aid law have been prepared to introduce at the next

session of the legislature in January, 1933.

2. *California Medical Association.*—The council of the California Medical Association in September, 1931, pursuant with the direction of the House of Delegates' action of April of the same year, established a Department of Public Relations of the California Medical Association to consist of a director, an advisory committee and those standing committees or commissions of the California Medical Association whose present functions deal with public relations, public health or public education. The component committees of the Department of Public Relations at present are the Committee on Public Policy and Legislation, the Committee on Medical Economics, the Committee on Hospitals, Dispensaries and Clinics and the Cancer Commission. The director of the department is Dr. Walter M. Dickie.

The first report of the director of this new department appears in *California and Western Medicine* for June, 1932. The program, as outlined, is to develop under the headings of: administration; statistics; education and publicity; legislation.

It appears that medical economics has been placed under the general heading of statistics, and as yet the program in this field has not been developed beyond the stage of collecting, assembling and filing statistics, articles and literature on the subject of medical economics.

3. *Wisconsin State Medical Society.*—The State Medical Society of Wisconsin began in 1931 a study of the medical facilities of the state, the income of Wisconsin physicians and the ability of Wisconsin residents to pay for medical care.

The report of the Wisconsin study which was approved by the House of Delegates of the State Medical Society of Wisconsin at their recent annual meeting contains much valuable information. The conclusions and recommendations are worthy of study by medical societies everywhere because of the clarity with which some of the principles underlying the practice of medicine are stated.

4. *Michigan State Medical Society.*—The Michigan State Medical Society has initiated a very comprehensive study of state wide medical facilities and practices under the directorship of Dr. Nathan Sinai.

1. Economic Structure of the State Population
2. Health Agencies
   (*a*) Official
   (*b*) Nonofficial
3. Industrial Medical Service
   (*a*) Lodge and Other Practice
4. Welfare Service
5. Tuberculosis
6. Mental Diseases
7. Miscellaneous
   (*a*) Workmen's Compensation
   (*b*) Contract Practice
   (*c*) Experiments in Provisions of Service
   (*d*) Medical Society Activities
      (1) Scientific
      (2) Public Relations
   (e) Study of Patients Dicharged from Hostals

This study has been started so recently that no comment can be made except to point out the completeness of details with which the society has outlined its work.

5. *Kent County Medical Society, Grand Rapids, Mich.*—The Kent County Medical Society in April, 1932, published a 43 page report of the Public Relations Committee study entitled "Community Responsibility in Providing Adequate Medical and Hospital Care for the Indigent and Reducing the Cost of Such Care for Persons in the Lower Earning Brackets. A Plan for Equitable Community and Professional Participation."

The report includes statements on the following subjects:

Prevalence of Illness
Proportion of Population Ill but Unattended
Economic Loss Caused by Illness
Cost of Existing Service, Exclusive of Cults
Amounts Expended by Families for Medical Care
Distribution of Expenditures for Medical Service
Maintenance Budgets
Social Service
Financial investigation of Social Agencies
Visiting Nursing
Charity
Distribution of the Physician's Time
Health Insurance

Public Voluntary Contributions to Health Activities
Medical Care of the Indigent Sick
A Proposed Plan for Medical Care

The work of this society's committee has been voluminous, and although it is impossible to check the report in every detail it contains ample evidence of a desire on the part of the organized profession of that section of Michigan to do its part toward a mutual solution of medical economic problems.

7. *Medical Society of the State of New York.*—In the *New York Journal of Medicine* for April 15, 1932, there appeared a voluminous report of the Committee on Medical Economics of that state medical society. The committee during the current year considered a large number of medical economic questions. The report is constructed in such a way that it is impossible to give a fair résumé here; suffice it to say that the report is another evidence of the importance and pressure of a multitude of phases of medical economics demanding consideration in every part of the United States.

Effect of General Economic Depression on the Medical Profession.—It is impossible to determine the extent to which the incomes of physicians have fallen. Sufficient evidence is available to show that not only have incomes dropped to an unprecedented low point, but the financial insecurity caused thereby has apparently also resulted in a sort of mental panic.

The following statements, therefore, seem justifiable if not self-evident:

1. Large numbers of physicians are now receiving bare subsistence incomes.

2. Stress of financial worries operates to distort clear thinking and careful planning on plans for medical care.

3. Immediate financial relief to the medical profession in times of general economic depression is likely to be given more serious consideration than measures for ultimate sound adjustment.

4. During periods of financial stress, opportunities frequently present thmeselves to disregard the principles of ethics and because of the exigencies of the moment to fall into undesirable and dangerous practices.

Some Principles Which Must Predominate in Any Plan for the Administration of Medical Care.—Some of the principles which have long predominated in the practice of medicine are stated below. In the interest of the public good and the future of the medical profession there should be no lowering of standards because of financial stress or temporary expediency. On the contrary, it may be possible that these principles can be strengthened and others of importance may be added.

1. The welfare of the public is of primary importance. Exploitation of the public for economic advantage and financial gain is inimical to good medical service.

2. The unity of medical organization must be preserved for the protection of the public welfare and the advancement of medical science.

3. Free choice of physician must be guaranteed.

4. Opposition to unfair competition among physicians must be maintained. Any distribution of medical service which depends on compulsion for its acceptance and use establishes an unfair competition among physicians and introduces a monopolistic control of medical care.

5. Sacrifice of quality of medical service through the action of commercial competition must not be tolerated.

6. No form of solicitation or compulsion must be exercised on patients to compel them to enter into any system of medical care. Any deviation from this principle subjects medical qualifications and care unduly to financial considerations.

7. Full responsibility for the determination of professional qualifications and ethics and adequacy of medical service must be vested in the medical profession.

8. Compensation for medical care should be adequate to insure competent service.

9. Preventive or preclinical medicine must not be neglected.

10. Any change in the method of administering medical care should always be preceded by careful and thorough study of the medical profession. Change is justified only on the premise that the new methods to be adopted are superior to the old which they supplant.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

The modern physician appreciates that whenever a case of tuberculosis is discovered every contact should be examined. To support him in this practice tuberculosis associations throughout the country are this year striving to focus public attention, through the medium of an educational campaign, on the communicability of tuberculosis. The slogan is, "Tuberculosis—From whom did he get it —To whom has he given it—Examine and protect every contact." Incorporated with these words is an illustration showing a doctor examining an x-ray plate to suggest also the necessity of relying on this instrument of precision for making the diagnosis. One of the active crusaders of this educational movement is J. Arthur Myers of the Department of Preventive Medicine and Internal Medicine, University of Minnesota. Space permits only a few quotations from his William Snow Miller lecture, bearing on the communicability of tuberculosis.

EXAMINING TUBERCULOSIS CONTACTS

The slogan of last year's tuberculosis educational campaign, "Tuberculosis causes tuberculosis—every case comes from another," tells the whole story, namely, that tuberculosis is a communicable disease. (The 1933 slogan is a repetition, with slight modification, of the same idea.) The recognition of this fact has done more to change conditions with respect to the incidence of tuberculosis than all of the steps that have been taken toward the control of this disease. The unfortunate fact remains that, although we have known the disease to be communicable, we have not always used this knowledge in the expenditure of funds and in the dissemination of publicity tended for tuberculosis control.

* * *

Now that we have been compelled to learn a good part of our tuberculosis over again, we are visualizing its control as never before. Optimism is being expressed everywhere by those who have carefully followed the recent developments in our knowledge of tuberculosis. The following practical applications of the recent developments give us an idea of what is possible and justify much optimism:

Dr. Hilleboe became curious about the tuberculosis status of 60 children four years old and under, who were enrolled in a nursery school. He applied the intracutaneous tuberculin test and found that four of them were positive reactors. Since every case comes from another, he began searching among their associates. An early revelation was that two of the teachers had tuberculosis, one definitely of the adult type. Members of the families of these children are now being studied for tuberculosis. Finding the source and ending the exposure is the best treatment for the children. Treatment of the patients who infected the children may begin much earlier than it would have without such an investigation, and such treatment should be the means of saving large numbers of other persons from unsuspected exposure.

Simons and Hilleboe applied tuberculin tests and x-ray examinations in a case-finding endeavor in a small rural community with the result that 19 new cases of tuberculosis were discovered. When they enlisted the support of the veterinarians 18 cows supplying milk to the community were found to be infected. Gibbons has done similar work in another rural community. If their work is continued, and tuberculin-testing is more generally applied to the children of the community at six- to twelve-month intervals, the time will be near at hand when the advanced case of tuberculosis will no longer be found in the community and when tuberculosis in any stage will be a rare disease.

Overcoming Diagnostic Difficulties—There have been two stumbling blocks in our present program of tuberculin-testing and x-ray examinations of positive reactors as a case-finding measure. The first is the objection presented by parents and others to instrumentation in the administration of tuberculin. In the hands of most workers the Moro test has not proved as accurate as the Pirquet test. However, Lovett has called attention to the percutaneous test, which consists of rubbing the skin with ether until hyperemia appears, in an attempt to remove the oil from the pores. Then a preparation containing tuberculin is rubbed into this area of skin. She finds this test fully as accurate as the Pirquet test but not as accurate as the Mantoux (intracutaneous) test.

The second stumbling block has been the cost of x-ray films. If one wished to make a tuberculosis inventory of 25,000 school children or 10,000 uni-

versity students, the cost of the x-ray films alone was stupendous. As an example of the attempt to solve this difficulty may be cited the experiment of the Queensboro Tuberculosis and Health Association which stimulated a manufacturer to develop a paper x-ray film on rolls. With the special equipment devised it is possible to make a thousand chest exposures in a single day with one machine.

In applying this case-finding method to university students, Diehl calls attention to examinations of 2,500 entering students in the fall of 1931. Among approximately 800 reacting positively to tuberculin and having x-ray-film examinations of the chest were found 15 cases of adult type of pulmonary tuberculosis in addition to many cases of pleurisy and childhood type of tuberculosis. One of the cases with adult type of pulmonary had advanced disease, five were moderately advanced, and nine were minimal. The control of these cases with reference to dissemination of tubercle bacilli on the campus, as well as individual treatment of the cases, is a service worth much more than it costs the institution and the student body. The fact that more than a half-dozen great American universities instituted similar tuberculosis-finding procedures in the fall of 1931 is of great significance.

Sanatoria are beginning to employ full-time epidemiologists, whose duty it is to work with family physicians of patients admitted to their institutions in finding the source of their patient's disease. Moreover, they place under examination and observation those persons who have been in contact with their patient. This procedure at the Minnesota State Sanatorium is proving very effective.

Collapse Therapy a Preventive Measure.—Recent advances in collapse therapy are doing great good for individual patients, but a greater good by closing off lesions which otherwise would be sources of exposure to vast numbers of people. The discovery of the fact that many patients may remain ambulatory while artificial pneumothorax is being induced, or soon afterward, promises to do much to relieve congestion in rooms, wards, and hospitals for tuberculosis patients, to relieve the patient of economic strain, to relieve the taxpayer of a considerable burden and to prevent the spread of tuberculosis. The chief problem is one of finding cases suitable for such treatment, that is, before the disease has become extensive and there is much breaking down of tissues. Past experience has taught us that unless such case-finding methods are used in order to detect the disease in the earliest possible state, many are too advanced to respond well to any form of treatment. Therefore, we must not wait for patients to come to us with complaints, but must go out and find them months and even years before they would develop symptoms.

A summation of the facts of tuberculosis now at hand points to prevention of the initial and all subsequent infections as the goal for which we must strive. This means that pressure must be brought to bear on all the modes of attack on tuberculosis now in existence, so that each will function at the highest possible efficiency. The principal methods are all based on case-finding, so that the source of exposure may be stopped.—*Recent Developments in Our Knowledge of Tuberculosis*, J. Arthur Myers, Am. Rev. of Tuberc., Feb., 1933.

INJUNCTION CASE STARTED

Charging that the Valley Camp Coal Company is practicing medicine as a corporation and without a state license, Dr. J. T. Nolen, formerly of Ward, has instituted injunction proceedings returnable before the circuit court of Kanawha County on March 20, 1933. The case has attracted considerable attention, as the legal question involved will affect a large number of coal companies and coal company physicians in this state.

The declaration in the above action sets forth that the Valley Camp Coal Company collects approximately $1,000 a month from its employees for medical service, that the company employs two physicians on salary to render this medical service, that the company purchases drugs and narcotics for the use of the physicians, and that the total cost of the medical service is much less than the amount collected. The declaration then claims that the defendant company applies the residue "to its own maintenance, profit, or expense as it may see fit."

"The said defendant," continues the declaration, "uses a portion of said check-off in the purchase of cocaine, opium, morphine, heroin, and other drugs and narcotics, which it distributes to the said physicians without having registered with the collector of internal revenue for this district its name or style, place of business and place or places where such business is carried on, without paying a special tax for the privilege of dealing in such drugs and narcotics, and without complying with the Acts of Congress in respect to dealing in, dispensing, selling, or distribution thereof, all of which purchase and distribution by said defendant is contrary to the law of the United States of America."

PRESIDENT'S PAGE

THE State Supreme Court of West Virginia rendered a decision on February 14, 1933, to the effect that disability due to silicosis does not come within the present scope of the compensation law. The court held that an employee has the right of action in common law because of disease contracted at work and attributable to the negligence of the employer. This is an interesting angle of our compensation law and one calculated to give many employers of labor considerable cause for worry.

There are several industries in our state in which there is considerable hazard from the inhalation of silicious dust. Outstanding examples are found in the pottery trade, the glass industry, sand blasting in steel mills and rock dusting in coal mines. There are many other industries besides these in which the hazard is present.

The attitude of industry toward the problem is usually straightforward and sincere, whenever the presence of this hazard is recognized. Under practically all conditions, it is possible to provide safety appliances and require their use. It has been found that the use of respirators is effectual in the prevention of dust inhalation. Furthermore, wet drilling reduces the air borne dust to a minimum. Very frequently employers realize the importance of such preventive measures much more keenly than do the employees. It is sometimes hard to obtain cooperation from the workmen. Theoretically, the whole problem of silicosis could be solved by the provision of adequate safety appliances and their conscientious use by all employees.

Since the above mentioned plan has not been found entirely adequate, employers very naturally seek to safeguard themselves against the annoyance and the financial risk connected with suits for damages by employees who claim to be suffering from silicosis. On the whole it is better for an industry to protect itself against such a business risk by handling the problem through the Workmen's Compensation Commission. Accordingly, a bill has been introduced in our legislature which provides specifically that silicosis shall be considered a compensable impairment.

The inhalation of any dust is more or less harmful, but the greatest amount of damage is done by those dusts bearing silica. The incidence of tuberculosis is very high among patients with silicosis, whereas it is relatively low among those miners exposed only to the inhalation of dust from soft coal. The development of silicosis is an insidious process so that often considerable pulmonary damage is accomplished before the patient is aware of his trouble. The essential pathology of the disease is a fibrosis about the bronchial tree beginning at the hilus and extending gradually towards the periphery.

Even though silicosis is a serious disease and a well known pathological condition, we must recognize the fact that it is difficult if not impossible to make an accurate differential diagnosis on clinical grounds alone. It is very easy to confuse the condition with chronic bronchitis, emphysema, tuberculosis or other chronic pulmonary disorders. X-ray examinations at the hands of expert roentgenologists familiar with the disease constitute our most reliable means of diagnosis during the life of the patient. Post-mortem examination of the lungs affords the only absolutely accurate test.

In view of the difficulties of diagnosis it is evident that many claims for compensation on this basis will be made by workmen who do not have silicosis. While the nature of the employment and the character of the symptoms may offer some presumptive evidence in support of such a claim, the actual decision as to the presence or absence of silicosis involves such a great physical risk for the employee and financial risk for the employer that it will be necessary for the industrial commission to fortify its position by obtaining expert advice in each individual case.

The problem of silicosis is handled most satisfactorily in the Province of Ontario, Canada. A commission of experts passes upon each case and decides the degree of disability present. Their decision is final. The bill proposed in our legislature does not provide for such a commission but does authorize the Compensation Commissioner to seek any assistance that he may deem necessary, and also permits the examination of the employee by other physicians selected by the employer. It would seem that an honest effort could be made under these conditions to determine which claims should be compensated as bona fide cases of silicosis, and at the same time, employers would receive protection against improper claims advanced by employees who do not actually have silicosis.

Furthermore, the bill provides for specific amounts of compensation determined by the degree of disability present. The earliest detectable stage of the disease calls for a flat sum settlement of five hundred dollars. When the disease has progressed to the next stage, settlement of the claim is accomplished for fifteen hundred dollars. In the advanced cases of silicosis, where tuberculosis is present, the case is considered as a permanent total disability and remunerated on that basis. These provisions are very similar to those of the Ontario act.

We feel that silicosis, as an industrial hazard, should be compensable under the State Compensation act. The interests of both the employer and the employee are protected more satisfactorily under this plan. Our medical association has had no part in the sponsorship of this particular bill. The writer feels that its provisions are fair, and hopes that it will receive favorable consideration at the hands of our legislature.

D. A. MacGregor
President.

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BULLETIN!

Acting under instructions from Dr. D. A. MacGregor, President, the JOURNAL announces herewith an extension of 30 days for the payment of 1933 dues. Heretofore the Association's delinquent list has gone into effect on April first of each year. Dr. MacGregor has extended this period to May first, for 1933 dues only. Members who have not yet paid their 1933 dues will remain in good standing providing their dues are paid on or before the first day of May, 1933.

THE STATE MEETING

Plans for the sixty-sixth annual meeting of the West Virginia State Medical Association to be held in Charleston on May 22-24, 1933, are rapidly nearing completion. The Kanawha Medical Society, host society for the coming convention, is leaving no stone unturned in its effort to provide a cordial welcome and ample entertainment during the three-day session. The work of the state program committee is practically completed at this time and the final program will be announced in the next issue of the JOURNAL.

The general scientific meetings of the Association will be held on the morning and afternoon of Tuesday, May 23, and the morning and afternoon of Wednesday, May 24. The convention will close with the annual banquet and dance on Wednesday night, May 24. All sectional meetings will be held on Monday afternoon, May 22.

Business meetings of the Association will include a council meeting on the morning of May 22, a meeting of the house of delegates on the evening of May 22, and the election of officers by the house of delegates on the evening of May 23.

A second innovation scheduled for the Charleston meeting will be a series of scientific exhibits by various hospitals and clinics throughout the state. These exhibits are being sponsored by the Kanawha Medical Society and Dr. D. N. Barber, Charleston, is chairman of this feature. A large number of these exhibits have already been scheduled. Any member interested in providing a scientific exhibit at the Charleston meeting can secure complete information by writing either to the Association headquarters or to Dr. Barber.

The headquarters hotel for the meeting will be at the Daniel Boone, and the general meetings and exhibits will be held in the Shrine Mosque, directly across the street. Reservations for hotel rooms should be made as early as possible.

Among the distinguished out-of-state essayists to appear on the program of the Charleston meeting will be Dr. P. Brooke Bland, Professor of Obstetrics at Jefferson Medical College, Philadelphia; Dr. H. R. Casparis of Nashville, Tennessee; Dr. C. C. Sturgis of Ann Arbor, Michigan; Dr. John A. Ferrell of New York City; Dr. R. G. Leland, Director of the Bureau of Medical Economics of the American Medical Association; Dr. Alvan L. Barach of New York City; Dr. Gordon F. McKim of Cincinnati, and Dr. J. W. Downey of Baltimore.

Practically all of the assignments for the state essayists have already been made by the committee, to take part in both the sectional and the general programs. The announcement of the local essayists will be made when the complete program is published in the May JOURNAL.

Charleston is planning for the largest state meeting in the history of the Association. Local committees are already busy seeing about parking privileges, golf tournaments, decorations, entertainment, and all the other details that go to make up a successful convention.

SENATE BILL 179

It is with the keenest regret that the JOURNAL reports the failure of Senate Bill 179 to become a law of the state of West Virginia. This was the bill that would have given the public health council medical supervision over the state institutions caring for the sick. The bill embodied the altruistic principles for which Dr. Albert H. Hoge fought so unselfishly during his term of office.

It was during the 1933 session of the legislature that former Governor Conley charged that our Association was a group of selfish men who were seeking to gain control of our state institutions for their own interests. In order to forestall any misunderstanding on the part of the Association members, we wish to point out that the Association was in no way connected with Senate Bill 179. The bill concerned only the public health council, which is appointed by the Governor, and it simply gave the public health council the necessary authority to visit and inspect the medical work being done at the state institutions.

It was due to the attitude of Governor Conley that the bill was purposely held up until the closing days of the session. Four days before the session ended, the bill passed the Senate without a dissenting vote. On the afternoon of the last day of the session, it was finally brought up for consideration by the House. A four-fifths majority was needed to suspend the constitutional rule and put the bill up for passage. The bill received better than a two-thirds majority but there were just enough negative votes to keep it from going through.

Had the bill become a law, we feel that it would have accomplished a world of good for the sick wards of this state. Its failure leaves the situation very much as it has been for the past decade. Those institutions that do good work will continue to get no credit; those that render inadequate medical service will continue to get no blame. The responsibility for the medical service, whether good or bad, will continue to remain in lay hands.

All sympathetic and conscientious members of the Association will naturally feel distressed over the failure of Senate Bill 179. Yet we can all feel somewhat comforted in the thought that our Association did its best to serve the sick rather than the profession itself. The passage of Senate Bill 179 would not have affected the income of a single physician in West Virginia. It would, however, have been a source of considerable satisfaction to every doctor in the state.

There is still a good chance that the recommendations of the medical profession in regard to the state institutions will be carried out. That chance is found in the dictatorial power of Governor Kump. The Governor is familiar with our ideas and sympathetic toward our suggestions. There is strong reason to believe that he will personally put into action the provisions set forth in the defeated measure.

The loss of this bill can in no way be considered a blow or even a jolt to the medical profession. The medical profession will always strive for the welfare of the sick. Toward this end, we shall continue to fight for a reform in our state institutions. Our first organized effort was barely defeated. This is not the time to brood. It is the time to realize that we have made great strides forward and that our next effort will undoubtedly be crowned with success. Medicine has had too many victories and too many defeats to cry over spilled milk.

SOME LEGISLATIVE BILLS

Members of the Association will no doubt be interested to hear something of the many freakish and hostile medical bills introduced during the recent session of the legislature. More than a dozen bills, aimed at the medical practice act of this state, were introduced. Each bill had an interested sponsor. A few had the organized support of some interested group within the state. The JOURNAL is pleased to report that none of these hostile measures was enacted into law. In fact, no

measure opposed by the Association has passed the legislature now since 1925.

The bill which caused more trouble for the Association than all others combined was House Bill 269, which would have excluded faith healers from the provisions of the medical practice act. This bill was killed in committee late in February, but a continued effort was made by its sponsors to bring the bill to the floor of the house. The bill was kept off the floor until the last night of the session, when an unsuccessful attempt was made to bring it out.

Other bills of interest and concern to the medical profession included the following:

House Bill 99, introduced on January 19. A bill to set a limit of $15 on doctors' fees in maternity cases. Indefinitely postponed in committee.

House Bill 451, introduced February 28. A bill to require physicians to furnish patients with x-ray copies at $2 per plate. Held in committee.

House Bill 536, introduced March 1. A bill to license midwives without examination upon the recommendation of two reputable citizens. Held in committee.

House Bill 128, to create a board of barber and beautician examiners and to regulate practice of barbering and beauty culture. Killed in senate.

Other bills considered by the committees on medicine and sanitation included the following:

Senate Bill 18, to amend the chiropody practice act by raising the academic requirements to four years of high school work. Passed the senate but failed in the house.

House Bill 158, proposing that every child entering a public or private school for the first time be examined by a licensed physician. Passed the house but failed to reach a vote in the senate.

House Bill 248, requiring that a health certificate be obtained before marriage. Passed the house but failed to reach a vote in the senate.

House Bill 403, providing for compensation for disability or death resulting from silicosis. Failed to pass the house.

All of the last named bills were watched with considerable interest but no action was taken either to assist or retard their passage.

All doctors engaged in public health work will be interested to hear of the passage of House Bill 458, providing for the appointment of a dentist to serve on the public health council in an advisory capacity. This bill was presented to the Association before it was introduced and was sponsored by the state dental society when the Association offered no objection to the bill. The dental advisor will have no connection with the examining board, but will sit in on public health questions pertaining to oral hygiene.

MORE ABOUT HEALTH INSURANCE

This JOURNAL published an editorial in the March issue under the title "Are We Soliciting?" This editorial, which attracted considerable outside attention, set forth the general premise that the medical profession, not the laymen, should meet the growing demand for some form of sickness insurance. If sickness insurance is good, said the editorial, "let's get control of it. If it is bad, let's keep that control."

Since the appearance of the March JOURNAL, a new plan of sickness insurance has been inaugurated in the southern section of the state which appears to have considerable merit. The organization is known as Associated Hospitals, Inc., and its directorate is made up of one representative from each hospital in the area covered by the corporation. Associated Hospitals, Inc., furnishes only hospital service to its members.

The chief merit of this new organization is that all hospitals within the area participate in the plan and thereby avoid the disastrous results of solicitation. All subscribers to the fund have free choice of both physician and hospital. The hospital bills of all patients

are paid from the fund according to the service rendered. Service is not rendered in the case of injuries covered either by Workmen's Compensation insurance or automobile liability insurance.

At the present time the entire southern section of the state is covered by scattered contracts for sickness insurance with a lay corporation owned and controlled by private interests at Welch. Therefore, the progress of this new corporation, which is exclusively in medical hands, will be watched with interest. If this new group, operated along ethical lines, can take control of the sickness insurance field in southern West Virginia, then a great forward step will have been made. We will then have at least one example of the doctors and hospitals controlling their own destiny.

As we stated last month, this JOURNAL does not advocate the organization of health insurance plans throughout the state, nor does it endorse any particular plan in any particular community. We do feel that in some sections where there is an unquestionable demand for some health insurance plan, the doctors and the hospitals would be wise to work out a satisfactory solution before some one else works out an unsatisfactory plan. We see no reason why any county society or any group of established hospitals should hold aloof from such a move.

TUBERCULOSIS PROBLEMS

Two interesting conferences on tuberculosis problems were held on March 30 and March 31, the first at Clarksburg and the second at Parkersburg, under the auspices of the West Virginia Tuberculosis and Health Association. Both conferences included morning and afternoon sessions and were directed by Dr. Philip P. Jacobs, Director of Publication and Extension Service of the National Tuberculosis Association.

The conferences were attended by physicians, nurses, social service workers and many others interested in tuberculosis work. Discussion related to organization work, new methods of diagnosis and treatment, diagnosis campaigns and other problems.

OBITUARY

S. K. OWENS, M.D.

Dr. S. K. Owens of Montgomery died at his home there on December 3 at the age of 66 years. He was widely known throughout Fayette County where he had lived most of his life. Dr. Owens had not been in active practice for a number of years prior to his death. He was a graduate of the College of Physicians and Surgeons, Baltimore, in the class of 1891, and received his West Virginia license the same year.

SUSAN DEW HOFF, M.D.

Dr. Susan Dew Hoff, 90 years of age, died at her home in West Milford of cerebral hemorrhage on January 2, 1933. She had not been in active practice for many years. She was licensed to practice medicine in West Virginia by a special legislative act in 1889.

M. F. HAMILTON, M.D.

Dr. M. F. Hamilton, 74 years of age, died suddenly on March 19 following a heart attack. He had been a member of the Association since 1907 and was a former member of the West Virginia House of Delegates. He was an active worker in both the Association and the Marion County Medical Society. At the time of his death, Dr. Hamilton had been in active practice in Mannington for more than 45 years.

The deceased was graduated from the medical department of the National University of Arts and Sciences, St. Louis, in 1883, and received his license to practice medicine in West Virginia the same year. He was widely known throughout the northern part of the state where he faithfully served his own people for so many years.

HYGEIA AND COUNTY SUPERINTENDENTS

That the seventy-two county superintendents of schools in Wisconsin may become acquainted with the outstanding publication in the country today that is endeavoring to promote the public health and which is found upon the approved list certified by the state superintendent of schools, the Woman's Auxiliary to the State Medical Society has entered six month subscriptions to *Hygeia* for each of the county superintendents. A personal letter, signed by the State *Hygeia* chairman, was sent to each county superintendent along with the subscription.

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.]

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PEANUT WORMS AND PELLAGRA *
IS THE INDIAN MOTH, *PLODIA INTERPUNCTELLA*, THE CAUSE OF PELLAGRA?

By HENRY P. DEFOREST, PH.B., M.S., M.D.
New York Academy of Medicine
New York, N. Y.

HAS a chance observation led me to discover the probable cause of that wide-spread condition known as pellagra? Is the Indian Meal Moth (Plodia interpunctella) the real source of this disease? I believe that both of these questions can be answered in the affirmative, and it is to defend this thesis that this paper has been prepared.

The communication which I have to present to you this evening is unique at any rate, and it is not impossible that the few observations which I am to relate may be of similar practical value in the discovery of the true cause of pellagra. If this cause proves to be the real factor in the production of this disease, a score of years from now, I hope that similar results may have been secured in eliminating the cause and therefore effecting a cure of a disease which is now very extensive in its ravages throughout the southern portion of these United States.

Some of my older colleagues in this Association will remember that I contributed certain chapters in the book entitled "Diagnostics of Internal Medicine" written by our one time distinguished chief and friend, Dr. Glentworth Reeve Butler. The first edition of this appeared in 1901. In that volume, which in its subsequent editions still remains a source of pride to all of us who worked with Dr. Butler, there appears the following paragraph:

"PELLAGRA (Maidismus; Italian leprosy; Alpine scurvy). Due to the use, as food, of diseased maize. It is unknown in America, but common in France, Spain, and Italy. The body becomes almost coal-black and the victims suffer from prostration and melancholia. The skin is thickened and rough, and finally exfoliates. Suppuration, with the formation of black crusts, is not uncommon. There are also diarrhea, indigestion and salivation. Mild cases may persist for months, and the more severe are attended by spasms, pain in the back and head, paralysis (chiefly a paraplegia), and melancholia or suicidal mania."

It will be noted that only thirty years ago such an eminent authority stated "it is unknown in America, but common in France Spain, and Italy."

At about the same time the following statement appeared in Osler's "Practice of Medicine," corroborating the opinion of Dr. Butler

* Read at the 403rd Regular Meeting of the Alumni Association of the Internes of the Methodist Episcopal Hospital, held at 543 Third Street, Brooklyn, New York, Pierre A. Renaud, Host, on February 25, 1932.

that the disease was at that time unknown in the United States:

"PELLAGRA (Maidismus). This is a nutritional disturbance due to the use of altered maize. The disease occurs extensively in parts of Italy, in the south of France, and in Spain. It has not been

Fig. 1. Pellagra, Italian Leprosy.—*Courtesy of C. H. Lavinder, M. D.*

observed in this country. It prevails extensively among the poorer classes, particularly in the country districts, and appears to be associated in some way with the use of maize which (according to most authorities) is fermented or diseased. In the early stage the symptoms are indefinite, characterized by debility, pains in the spine, insomania, digestive disturbances, more rarely diarrhea. The first clear manifestation of the disease is the pellagral erythema,

Fig. 2. Pellagra, Egyptian Leprosy.—*Courtesy of C. H. Lavinder, M. D.*

which almost invariably appears in the spring. This is followed by desiccation and exfoliation of the epidermis, which becomes very rough and dry, and occasionally crusts form, beneath which there is suppuration. With these cutaneous manifestations there are digestive troubles—salivation, dyspepsia and diarrhea—which may be of a dysenteric nature. After lasting for a few months improvement occurs in the milder cases and convalescence is gradually established. In the more severe and chronic forms there are pronounced nervous symptoms—headaches, backache, spasms, and finally paralysis and mental disturbance. The paralytic condition affects the legs and leads gradually to paraplegia. The mental manifestations, which are rarely met with until the third or fourth attack, are melancholia or suicidal mania. Finally, there may be a condition of the most pronounced cachexia.

"The anatomical findings are indefinite. Chronic degenerative changes have been found, particularly fatty degeneration and a peculiar pigmentation in the viscera. The measures to be employed are

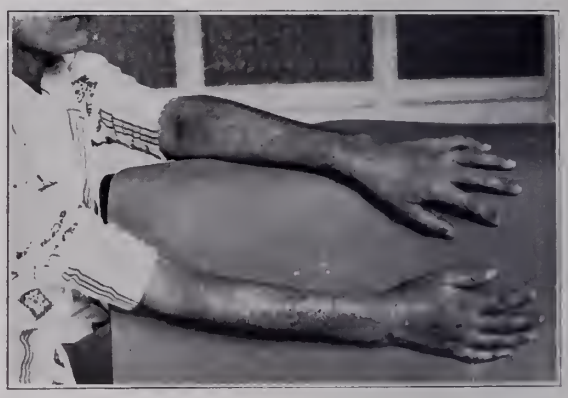

Fig. 3. Pellagra of Hands and Forearms, Before Treatment, Puerto Rico Case. — *Courtesy of E. N. Bocanegra Lopez, M. D., New York, N. Y.*

change in diet, removal from the infected district, and, as a prophylaxis, proper preservation of the maize."

A generation has passed since these two short articles were written, but the cause of the disease has not yet been discovered. Treatment, though often successful in stopping the progress of the disease, is largely empirical and without definite direction.

The Journal of the South Carolina Medical Association for July, 1931, contains a report by Dr. C. V. Akin, of the United States Public Health Service, on "Plans for an Investigation of Pellagra in South Carolina." The following abstract outlines the salient features of the program:

"The Public Health Service has taken the position that pellagra is a diet deficiency disease just as is beri beri. While there seems to be some difference of opinion or perhaps I had better say a frank ag-

nosticism regarding the cause of pellagra, it is the general concensus of opinion among the physicians to whom I have talked that the prevention and cure of pellagra is strictly a matter of diet.

Fig. 4. Pellagra of the Hands and Forearms. After Treatment. Puerto Rico Case. — *Courtesy of E. N. Bocanegra Lopez, M. D., New York. N. Y.*

"Two counties have been selected in east central South Carolina and west ceneral South Carolina where an intensive study of pellagra will be undertaken. House to house surveys will be made through which approximately all cases of pellagra will be located. Full information regard-

Fig. 5. Pellagra of the Neck. Before Treatment. Puerto Rico Case.—*Courtesy of E. N. Bocanegra Lopez, M. D., New York, N. Y.*

ing each case will be secured, and effort is being made to identify all factors which might contribute to the cause of the disease in each case.

"If pellagra is a diet deficiency disease and if it may be prevented or cured by the regular consumption of such items of food as are suggested by those who sponsor the diet deficiency hypothesis, there seems to be no real reason why the people of this state may not rid themselves of a condition which annually affects some 20,000 to 30,000 persons, and annually kills several hundred. It is certain that the soil of South Carolina will grow every food which has been suggested as of value in preventing and curing pellagra. The real difficulty, therefore, will be in getting the people who are the most apt to be affected by pellagra, to raise and to eat the foods which are rich in protective elements."

Fig. 6. Pellagra of the Neck. after Treatment. Puerto Rico Case. Figs., 3, 4. 5, and 6. of the same patient. Note the characteristic "Pel-agra" (Signifies "Rough Skin") of the hand and around the neck.—*Courtesy of E. N. Bocanegra Lopez. M. D., New York, N. Y.*

The October number of the Journal of the South Carolina Medical Association has the following account of a pellagra clinic held in Oconee County with the coöperation of the doctors of the county:

"The problem of pellagra in Oconee County, South Carolina, is one of considerable magnitude. A pellagra clinic was held in the County Health Department on August 12th by Dr. James A. Hayne of the South Carolina Board of Health, and Dr. C. V. Akin of the United States Public Health Service.

"Oconee County is the westernmost tip of the state. A portion of it is mountainous. The land area is 650 square miles, with an altitude ranging from 500 to 2,000 feet, and a population of 33,000 people. The streams are rocky and shallow but

furnish a small amount of fish and there is abundant water power. Five cotton mills are operated in the county. The soil is rich and the crops are varied. It produces some of the finest apples in the state. The Nantahala National Forest takes in a part of the mountainous section.

"Sixty-five pellagrins attended this clinic, all white except two who were negroes. Farm tenants and textile workers made up the larger portion of this number. Pellagra is a countrywide disease. Grouping these cases according to age, the highest per cent was between the ages of thirty and forty

Fig. 7. Pellagra of Head, Chest and Arms; Extensive Erythema at the Height of the Disease. Notice the symmetry and the sharp lines of demarcation.—*Courtesy of Claude Hervey Lavinder, M. D.*

years or at the peak of their earning power. The youngest was a child of five years while the oldest was a woman of sixty-five.

"Among the clinic findings it was ascertained that many of these patients were subject to recurring flare-ups, and the lives of children and adults jeopardized as a direct result of neglect. The disease affects one's earning capacity, and economic barriers prevent continuous medical care and supervision; time passes and patients expect a little treatment now and then to control the tendency of their disease to grow worse. All of these cases had suffered from a few months to several years. Some were receiving no treatment whatever, with others, treatment was so irregular that it was almost ineffective. Those treated by local physicians obtained desirable results for the period of time that they were being treated, but in many cases the doctor was unable to effect a cure because of long intervals between, when they slipped away from his care without further treatment or observations, drifting into a state of chronic neglect since they were unable to

Fig. 8. Pellagra of the Neck. Forearms and Hands. Illinois Case. Note marked symmetry.—*Courtesy of George A. Zeller, M. D., Superintendent, Peoria State Hospital, Peoria, Ill.*

provide a proper diet, or medical treatment, consequently, failing to see the results for which they had hoped.

"Without this clinic many patients would not have come under medical supervision and advice at least for a time, nor would they have been followed up and the trend of their disease noted, with the urge that they keep under the observation of their

Fig. 9. Pellagra of the Neck. Casal Collar or Necklace. Described by Gaspar Casal of Orviedo, Spain, in 1735.—*Courtesy of C. H. Lavinder, M. D.*

physician until a complete recovery was brought about; neither would they have received educational literature on pellagra nor advice on diet and hygenic living.

"Brewers' yeast is sold through our Health Department. The increased amount of this yeast advised by local physicians to pellagrins has increased the number of office contacts. Most cases take yeast, many take it spasmodically or as they can afford it. More cases would come to our office if it were not that a grocery store in the county handles brewers' yeast also. It is given free through our Health Department to cases of extreme poverty, and sold to all who can pay for it. A careful record of every name and address of pellagrins contacted

Fig. 10. Pellagra of the Hands. Note the dark color of erythema and line of demarcation. South Carolina Case.—*Courtesy of J. J. Watson, M. D., Columbia, S. C.*

is kept in the County Health Department. New and old cases were reached for the clinic through posters, press publicity, personal interviews, letters, physicians and surveys.

"The coöperative endeavor of the local physicians of the county with this clinic was manifested through the number of cases that they sent to it.

"Pellagra offers a tremendous field in preventive medicine. It is a problem of economic significance. Serious steps are being taken to prevent its inroads upon the health and efficiency of the people. This is accomplished through education which includes instruction in diet and urging cases to put themselves under the immediate care of their physician, intensive case-finding and follow-up work.

Fig. 11. Pellagra of the Hands. Extreme Pigmentation.—*Courtesy of C. H. Lavinder, M. D.*

"The good results of pellagra clinics are sufficiently definite to emphasize an added obligation on the part of the United States Public Health Service

Fig. 12. Pellagra of the Feet. Wet Type of Erythema. South Carolina Case.—*Courtesy of C. H. Lavinder, M. D.*

in the matter of examining and advising pellagrins. The favorable reaction and response of the people to a pellagra clinic have been interestingly demonstrated."

This briefly outlines the change which has taken place in the United States during a single generation. In 1900 pellagra was stated to be practically unknown in this

Fig. 13. Pellagra of the Feet in Negress. Desquamation in Large Patches.—*Courtesy of C. H. Lavinder, M. D.*

country. In 1931 in the single state of South Carolina, nearly thirty thousand cases have

Fig. 14. Pellagra in Italy. Map showing area of maximum incidence.—*Courtesy of C. H. Lavinder, M. D.*

been reported and tabulated and doubtless if all of the other states where the disease is prevalent could be surveyed in a similar careful and painstaking way, the number of pellagrins found would be numbered by hundreds of thousands and well over a thousand deaths would have been recorded. It is apparent, therefore, that this disease is widespread and any suggestion which may lead to the discovery of the cause of pellagra is of vital and far-reaching importance.

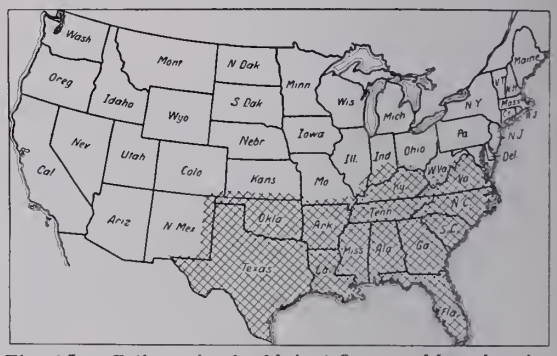

Fig. 15. Pellagra in the United States. Map showing area of maximum incidence. The first case was reported in Massachusetts in 1864. The first case in New York in 1882. Isolated cases have been reported in every State in the Union.—*Courtesy C. H. Lavinder, M. D.*

In this article, therefore, I have endeavored, with the assistance of many friends, to show to those physicians who have never seen a case of pellagra the various characteristic lesions of the disease. No other single article, which I have found in research, has been so fully illustrated. Accurate diagnosis, therefore, should be possible for any one.

Fig. 16. Indian Meal Moth: Plodia Interpunctella. Larva, Natural Size, Showing the fine filaments which are extruded, thus causing it to leave behind a silken thread wherever it crawls.—*Courtesy of the United States Department of Agriculture, Bureau of Entomology, E. A. Back Entomologist in Charge of Stored Products Insect Investigations.*

Only two cases of pellagra have come under my personal care. One was a colored woman who formerly lived in Barbados. The other was a friend who contracted the disease while traveling in Egypt. A few of our members lived and had their medical training in southern states, or in southern colleges. They are doubtless more or less familiar with the

appearance of pellagra. To our other members this disease has been purely a matter of academic interest or discussion. For their information, as well as for my own, I have collected from various sources a series of illustrations showing the characteristic lesions of this disease.

Fig. 17. Indian Meal Moth; Plodia Interpunctella. Well-grown Larva, crawling on kernel of wheat. These worms are white or greenish in color and frequently eat out the germ end of wheat, as they did of the peanuts. They attain a length of about half an inch.—*Courtesy of E. A. Back.*

The task at first appeared to be a simple one. Applications were made to the Surgeon-General of the United States Army, to the Medical Director of the United States Navy, and to the Surgeon-General of the United States Public Health Service. Each of these gentlemen, some of whom are personal friends, was perfectly willing to coöperate, but was unable to supply me with a single illustration. Dr. Zeller, of Peoria, Illinois, had at one time a large number of photographs, taken at the time when the first extensive epidemic of pellagra was observed in this country; only one of these could be found; the others were stored away and not available. I then asked a number of personal friends for material, among them several well known dermatologists. Not a single illustration could I secure. Next I wrote a letter to the New York Medical Week,[1] stating my needs and asking for assistance. Two physicians only, out of a membership of many thousands, were able to help me in this matter. Dr. E. N. Bocanegra Lopez sent me two sets of photographs of cases of pellagra treated by himself, while in the Institute of Tropical Medicine and Hygiene, at San Juan, Puerto Rico, Dr. Abraham Jablons, while unable to supply photographs of his own, referred me to Dr. C. H. Lavinder of the Pub-

Fig. 18. Indian Meal Moth; Plodia Interpunctella. Cover from a tin containing corn. Note the webs hanging on the under side, spun by Indian Meal Moth larvae.—*Courtesy of E. A. Back.*

lic Health Service. I wrote next to Dr. Lavinder, and there I struck a mine of information, for he has written several articles on pellagra. The last and most comprehensive of the appeared in the *Enzyklopaedie der Klinischen Medizin.*[2] The English original of this article is in the Library of the New York Academy of Medicine; but the article in German is well illustrated and, through the courtesy of this physician and the publisher, I am able to show photographs of characteristic lesions of the disease. To these various gentlemen I wish to express my thanks for their cordial and valuable coöperation in making the present article of much more

practical value than it otherwise would have been.

Having secured this material, which should enable any careful observer to identify pellagra, I sought for the report of a single case which would illustrate the clinical picture of the disease in such a way as to be helpful to physicians more or less unfamiliar with it. Much literature on pellagra has been accumulated but very few case reports could be found. I was greatly pleased, therefore, to find that the best case report available was written by James R. Bloss, M.D., now Editor of THE WEST VIRGINIA MEDICAL JOURNAL. It is a matter of historic interest to note that his paper, "Pellagra—Report of a Case," published in THE WEST VIRGINIA MEDICAL JOURNAL in July, 1910, records the first case observed in the state of West Virginia.

S.S.—Female. Brunette, age 26. American. Married. No children. Admitted December 9, 1909; being committed by justice of the peace as being insane; suffering with hallucinations; history given that she had a similar attack some months before. At times maniacal, requiring morph. sulph. 1 gr. and hyos. hydrobrom. gr. 1-100 hypodermically several times a day to keep her quiet. When at home had to be in a straight jacket and held. The alleged cause was worry with poor health; had lost markedly in weight; been in general hospital and had been curetted on two occasions.

When admitted the following notes were made: Bed-fast; very much emaciated; no elevation of temperature; pulse from 80 to 90, no heart murmurs; urine showed no abnormality; blood count not made. Had a vaginal discharge which was not specific. Lungs showed nothing abnormal. There was an area of brownish discoloration on the dorsum of the right hand and another just below the elbow on the left arm; the skin seemed to be thickened and there was a fine scaly exfoliation. Careful inquiry of relatives disclosed the fact that during the previous spring she had so-called eczema of the hands and arms; there were no signs of any lesions on face, back or neck or dorsum of the feet and we could get no history of there having been.

The tongue was coated, with bright red edges; the mucous membrane of the gums and cheeks was very red; ptyalism was marked; breath was very offensive. Had diarrhea with greenish discharges, at times mixed with blood; the bowel discharges were exceedingly offensive.

The nervous symptoms were great restlessness and insomnia and she was at times quite violent; disorientation with auditory and visual hallucinations; when quiet enough to answer questions with any degree of accuracy, said that she saw "two doctors, two nurses, etc.," when there was only one (diplopia). The plantar, patellar and olecranon reflexes were all much exaggerated; there were hyperesthetic areas over the epigastrium and lower extremities. Muscular weakness of the lower extremities was very marked.

The alimentary tract was thoroughly cleaned out; colon irrigations of normal salt solution used; bismuth and triple sulphocarbolates with krameria were given, and a mouth wash containing potass. chlorat. and liq. antisep. (U.S.P.) The diarrhea was checked and the condition of the mouth rapidly improved; patient became quiet and got some sleep at night with no sedatives; mental condition cleared up so she talked and answered my questions. Began to take nourishment well and gained in strength until she could sit up in bed. In the course of two weeks had improved so that she wished to get out of bed, but when she attempted to stand, the muscular weakness of the lower extremities prevented her taking a step. If her weight was supported and she was encouraged to walk, she dragged her feet along as seen in cases of paraplegia. She complained at this time of marked tenderness of the spine in the dorsal region, and great pain in her feet if they were touched or even from the weight of the bed coverings. She was now taking Fowler's solution after meals and nux vomica with gentian before meals. This improvement continued for some three or four weeks and I felt very hopeful for her recovery. Suddenly her temperature ran up to 102 to 104; pulse varied from 112 to 130; an intractable serous diarrhea set in and she became stuporous; mucous membrane of tongue, gums and cheeks rapidly developed ulcerations. The head was retracted, there were tonic retractions of the muscles of the upper and lower extremities with plantar flexion of the feet; at times fibrillary twitching of the muscles of the face and neck; if touched she would groan and cry out as if it were excruciatingly painful, though her mental condition prevented any accurate information on this point. There was no roseola or any other symptoms of typhoid. This condition continued in spite of anything we could

do for her and her death occurred January 30, 1910, at 12:20 P. M. An autopsy was not secured.

This was, I think, a case of typhoid pellagra terminating a case that had probably existed, unrecognized, for a year or more. It is interesting to note, in relation to the theory of the use of maize as being an etiological factor, that this patient had not used Indian corn or its products, except occasionally as corn bread, but most of the other predisposing factors mentioned under etiology were present—poverty, unsanitary surroundings, poor health.

Fig. 19. Indian Meal Moth: Plodia Interpunctella. Tip of ear of corn showing, a-Three moths with their characteristic light and dark markings, and b-Two well-grown larvae and some webbed frass. The adult moth is distinguished from all other grain-infesting moths by having the outer two-thirds of its wings brownish and the inner third whitish gray. It has a wing spread of about three-fourths of an inch.—*Courtesy of E. A. Back.*

This excellent case report embodies practically all of the classical symptoms, so well described by Lavinder in his various monographs on pellagra and, taken in connection with the excellent tables, charts and temperature curves shown in Dr. Lavinder's recent article, should enable one who has occasion to do so to make a fairly accurate diagnosis in a suspected case of this disease.

For most of the material thus far I am indebted to the observation, research and writing of others. The background and the middle distance of the picture have been filled in. In the foreground I now wish to present certain observations and conclusions of my own, which will, I hope, prove of interest at any rate and be given careful consideration. It is

Fig. 20. Indian Meal Moth: Plodia Interpunctella. Corn on the cob from a corn crib, from which is hanging a considerable amount of webbing spun by the moth worms. In this webbing is lodged quite a bit of farinaceous material in powdered form pushed out from the kernels by the feeding larvae. This moth rarely attacks sound grain, but as is here shown, frequently attacks grains already injured by other grain pests. Such webbing as is here shown develops only when corn or other grains are left unmoved for some time.—*Courtesy of E. A. Back.*

my hope that they may ultimately stimulate further experimentation in this particular field and lead to the solution of another important problem in preventive medicine.

During a recent vacation in September a friend occupied our apartment for about two months. There was in the corner of our

library a drop-leaf table on which two telephones stood. Against the wall was a row of eleven books supported by metal bookends. In the vacant space in front of the books was a writing pad and a candy container of amethyst glass made like a Petri dish. Early in October, my wife took up one of these books casually and on turning back the front cover found that the space between the cover and the fly leaf contained about a dozen little worms, each enclosed in a very delicate silk cocoon and evidently on the point of being converted into a chrysalis. My attention was called to these worms and I brushed them all off on a piece of paper and put them in a bottle of alcohol. Further investigation of the books disclosed the fact that of the eleven books, two were bound in green, one in red, one in brown, one in yellow and six in black. Worms were found in all of the volumes covered in black, whether the binding material was cloth, buckram or leather. No worms at all were found in any of the books bound in color. In Siam, the elephant huts are painted with shellac and lampblack; flies and other insects appear to be repelled by this color, although, of course, the shellac which is really a resinous exudate from a variety of poison ivy, may be a factor in the case. When the American Army, under General Pershing, was encamped along the Mexican border, shortly before our participation in the World War, it was found that, if the kitchens, sinks, and latrines were painted with black, flies and other similar insects were far less numerous. It seems to be fairly certain from various experiments that have been made that certain colors attract certain insects, thus given areas of yellow or of blue attract more insects than similar areas in black or red. Admitting that this is the case, may it be possible that the fact that these particular insects, having lived practically all their lives in ultra-violet light, may have modified their color sense. Whatever the theory may be, the facts remain as I have reported them.

Next began a search for the source of these worms. When the candy dish was opened, about a pint of shelled peanuts was found. Some of these peanuts had been entirely eaten; merely the thin, reddish skin remained behind. In most instances, however, the two cotyledons were left practically untouched but at the embryo end was a clean cut notch as if a drill had been used. Scattered among the peanuts were large numbers of the worms, some of them already in a chrysalis state, others crawling about. At the tail end of each crawling worm was a brushlike formation of extremely fine white silk which seemed constantly to extrude as the worm progressed and, therefore, the mass of peanuts showed a trail of silk wherever the worms had traveled. This curious appearance is shown in Fig. 16 from the cover of Farmer's Bulletin No. 1260, issued by the United States Department of Agriculture and devoted to "Stored-Grain Pests." For want of a better name, I called these newly discovered larvæ "peanut worms." The whole matter reminded me very much of a conundrum which I heard when a boy:—"What is worse than a worm in an apple?" The answer is:—"Half a worm!"

There were no moths nor beetles found in the dish of peanuts nor in the room, though it is not impossible that some had already hatched from the chrysalis state and had flown away. (Evidently many of the worms had concealed themselves in some corner and pupated, for it may here be noted that for several months after our return, the adult form of the Indian meal moth appeared from time to time in our apartment. About twenty were killed and were easily identified by the illustrations and descriptions.)

I turned to my old friends in the Department of Agriculture, where I once worked through the kindness of Dr. Theobald Smith and my classmate, Dr. Veranus A. Moore. I described my "peanut worms" as well as I could in letter and by return mail received from Dr. E. A. Back, the entomologist in charge of stored product insect investigations, the Bulletin to which I have referred. In addition, he advised me as follows:

"I note your interesting observations on insects near the peanut jar. Peanuts are very

susceptible to attack by a moth called the 'Indian meal moth.' This is one of the most troublesome pests that peanut and candy establishments have to fight. Very often supplies of peanuts and other nut meats left unmolested for some time in a private home will become badly webbed or eaten by these moths. The white larval forms, upon becoming well grown, usually crawl away from the food upon which they have developed and seek a sheltered secluded spot in which to spin their loosely constructed cocoon. In this they pupate and from this they usually crawl as a moth."

The paragraph devoted to this particular pest reads:—"The Indian meal moth, *Plodia*

Fig. 21. Indian Meal Moth: Plodia Interpunctella. "Ear" of jute sack containing corn badly infested with the Indian Meal Moth. The larvae on leaving the sack, crawl about, spinning as they crawl, a fine web. When many larvae are present, the webs spun form a dense mass. *Courtesy of E. A. Back.*

interpunctella Hbn., is a rather handsome moth with a wing expanse of nearly three-fourths of an inch. It is easily distinguished from other grain pests by the peculiar marking of its forewings. These are reddish brown with a coppery luster on the outer two-thirds, but whitish gray on the inner or body end. Moths and larvæ are shown in Fig. 9. The female moths lay from 300 to 400 eggs, singly or in groups, on food material. The eggs hatch within a few days into small whitish larvæ or caterpillars. These larvæ feed upon grains, grain products, dried fruits, nuts and a rather wide variety of foodstuffs. When full grown, the larvæ are about half an inch long, dirty white in color, varying sometimes to greenish and pinkish hues. A full-grown larva is shown in Fig. 17, clinging to a kernel of wheat. This larva spins a silken cocoon and transforms to a light-brown pupa, from which the parent moth later emerges. The Indian meal moth may pass through its egg, larva, and pupa stages in about four weeks during warm weather.

Fig. 22. Meal Snout Moth: Pyralis farinalis L., Larvae, pupae and adults. This species is distinct from the Indian Meal Moth, and is given for comparison. It shows the different stages through which the moth passes. The larvae and pupae of this species closely resemble those of the Indian Meal Moth, but, the larva leaves no trail of silk.—*Courtesy of E. A. Back.*

"The larva of the Indian meal moth spins a web as it becomes full grown, and leaves behind a silken thread wherever it crawls. Fig. 16. When sacks of cracked corn, meal or corn in the ear that has been previously injured by other pests, become heavily infested, this webbing often is sufficiently abundant to attract attention. Fig. 18. The loosely

clinging web shown on the ear of corn in Fig. 20 is characteristic of this pest."

This definitely identifies my "peanut worms." My office secretary, Mrs. L. W. S. Massie, who had helped me in this correspondence and had observed the worms, told me that in her home in Virginia, it was not an uncommon thing for Indian meal, particularly the so-called "water ground" Indian meal, made from the whole grain, if allowed to stand in a warm, moist place for any length of time, to become definitely threaded through and through with masses of this silky material and that it was the general belief in that portion of Virginia where she had lived that if Indian meal, webbed in this way, were eaten, the person eating it would develop pellagra. I then spoke to several other friends who were housekeepers and found that at the present time, Indian meal is bought as a rule in waterproof and moistureproof packages or cartons and that this meal seems to keep indefinitely, whereas Indian meal bought in bulk almost always, at the end of the summer, would be found filled with this fine, silky material.

Here then is a possibility to be considered as to the actual cause of pellagra.

Certain factors must now be considered in the endeavor to find an adequate and practical explanation of these rather unusual observations. Recent explorations and studies have convinced scientists and archeologists that the various races of the American Indian, extending from the tribes of Alaska through the Indians of the Plains, the Mound-Builders, the Toltecs, the Mayas, the Incas and even the few Fuegians, came from the west, either through the mainland of northern Asia, through the islands of the Pacific, or possibly, in the region of Chile and Patagonia, from a continent similar to the fabled Atlantis and thus once connected the southern part of South America more or less directly with New Zealand and possibly Australia. My friend, Rowlee, was much interested in the fact that the forest floor of the region east of the Andes in Argentina was very similar to the forest floor of New Zealand. All agree, however, that the migrations of these various peoples came from the west and traveled toward the east.

When in later years Europeans began their voyages of discovery, the routes that were followed all led from the east to the west. These various adventurers, besides the silver and gold in which they were particularly interested, found many new plants and animals. Some of these were of such importance that they were carried back to Europe and soon were made a part of the life of that continent. Tobacco, Peruvian bark, peanuts, potatoes, the pumpkin and, Indian corn were all indigenous to the New World.

About the year 1560, the French Ambassador to Portugal was recalled, but before he left Lisbon he sent Queen Catherine De Medici a package containing seeds of a strange plant which had arrived at Portugal by the way of Spain from Golden Mexico. They were the seeds of the tobacco plant and her Majesty's Ambassador to Lisbon subscribed himself Jacques Nicot. When he came home, Nicot publicized tobacco and he had his reward when the new plant was christened Nicotiana.

The term "tobacco" was derived from the name of the tube in which the Indian smoked it, yet the plant's essential ingredient was thenceforth called nicotine. Drake got no verbal credit for delivering the weed to Raleigh, nor Raleigh for lighting up a pipefull before he went to the scaffold and demonstrating what a good smoke will do to calm your nerves. Nicot, who was a philologist, compiled the first old French Dictionary. That fact has been forgotten, but his name is still preserved among the "Accidental Immortals."

Peruvian bark was another substance found on the eastern slopes of the Andes in the head waters of the Amazon. The story of this bark, with its discovery and many uses throughout the world at the present time, is also an interesting one, for in the Franciscan Monastery in Lima, Fray Alonso Manrique issued an edict on the 15th of May, 1641, stating that "on the 14th of the month of January of this year, 1641, our Lord gathered

unto Himself Lady Francisca Henriques de Rivera, Countess of Chinchon and patroness of our Holy Faith." Here again is the record of another "Accidental Immortal" for the Jesuit's bark, as it was originally called, soon bore the name of Chinchona, in honor of the Vice-Queen of Peru.

Potatoes, both blue and yellow, were indigenous in Peru. Their value as food was early recognized and here again the Jesuit priests, who accompanied the army of Pizarro to the land of the Incas, were instrumental in introducing this new plant, first into Spain, then to Portugal, then to England, then to Ireland. It found its way ultimately to New England in the New Hampshire colony about 1636. An old letter in my possession, written from New Londonderry, N. H., tells of the first crop of potatoes and that the potato balls, which appear after the flowers have fallen, were cooked and made into a stew "which proved to be very insipid and unsavory." Some time elapsed before the colonists discovered that the edible part of the potato, the tuber, of which they had heard so much from friends in Ireland, was really under the ground.

The pumpkin was more largely cultivated in North America, and when the army of General Sullivan during the Revoluionary War, marched north from Elmira to Ithaca and the land of the Five-Finger Lakes, one of the especial reasons for his expedition was to destroy the pumpkin and the corn which formed the chief food supply of the Iroquois nation.

Peanuts, too, were originally found in Brazil, were carried to Europe, back to America and now are extensively cultivated, particularly in our southern states. In my boyhood days I sold peanuts at the County Fair and the "fine, gay, elegant, double-jointed, humped-back California peanuts," which formed a part of my oratorical stock in trade, introduced California solely for the rhetorical effect. At that time, practically all of the peanuts in the country were raised in Virginia and a few adjacent states. About thirty years ago a smaller variety, called Spanish peanuts, were believed to be more edible, and were cultivated in this section of the country. Barnum, Forepaugh, and Ringling certainly did their share toward the distribution of this particular product throughout the country. In Vienna in 1891, the entire American Colony, of which I was at that time a member, was plentifully supplied with peanuts by Dr. Southgate Leigh of Norfolk, Virginia, who imported from his home a five bushel bag of these nuts. They were quite unknown in Vienna and had to be roasted in a coffee machine, much to the amusement of our various Viennese hosts. There were no worms and no moths in this shipment. On the authority of the Department of Agriculture: "This is now one of the most troublesome pests that peanut and candy establishments have to fight."

Indian corn was cultivated by the Mayas in Yucatan certainly two thousand years ago. The workmen who aided in the recent excavations of the magnificent "Temple of the Warriors" stopped work for a week at the right season to plant Indian corn and stopped work again, at a later date, to harvest it. In Prescott's "Conquest of Peru," descriptions are given of ears of Indian corn wrought in solid gold, used for ornamentation in the Temples of the Incas. Indian corn, or maize, therefore, has been used as an article of food on this hemisphere for many centuries.

As the influence of the Mayas extended to the north to the Toltecs, the Aztecs, the Mound-Builders, and ultimately to the forerunners of the Hurons, the Algonquians and the Iroquois, corn came with them, not only as an article of food, but as the basis of the Corn Dance and various other semi-religious ceremonies which all of these tribes practiced in a more or less modified form. These six articles of food, all of which are now staple food products in our own country, have existed here for centuries. The records of all of those, which I have mentioned, are perpetuated in the Jesuit Relations to which remarkable documents we are indebted for most of out actual information regarding the colonization by European powers of this hemisphere.

The deadly canyon fever in Peru which had destroyed some 300,000 inhabitants of that region shortly before Pizarro led his expedition of conquest of the south is described in minute detail. It is certain, therefore, that had the disease of pellagra existed in any one of these widely separated regions, mention would have been made of it in these valuable original documents. It is not mentioned and we may, therefore, conclude that it did not exist.

All of these foods were transported primarily from the west to the east. Now let us consider another article of food which, as a result of recent circumstance, was imported from the east to the west.

When Rowlee and I were schoolboys, practically every farmer had his "Chestnut Grove" and his "Sugar Maple Bush." The latter remains but the only remains of the former are the spectral trunks of chestnut trees seen everywhere in the forests east of the Alleghany Mountains. The story of the course and progress of the so-called "chestnut blight" is a melancholy one. There seems to be no definite information as to where the blight originally started, but its progress was rapid and thus far appears to be uncontrollable. Chestnuts, during the previous hundred years, had become a staple article of diet throughout the eastern United States. They were easily accessible, inexpensive and tasty. With the destruction of our native trees, new sources of chestnuts were sought for and readily found. The importation of chestnuts from Italy soon became an extensive part of our import trade. Most of the chestnut vendors and the peanut vendors were Italians. Italy then became and still remains the principal source of this nut. Within recent years, it is true that successful attempts have been made to cultivate chestnuts, hickory nuts and walnuts. Our personal friend and colleague, Dr. Robert Tuttle Morris, another Cornell friend of mine during my student days, has been largely responsible for this form of agriculture. There are many farms scattered through the middle west in which chestnuts have been planted, cultivated, studied, cross-fertilized and those trees selected which seemed to be immune to the chestnut blight. On the authority of the *Rural New-Yorker*, "the larger chestnuts are shipped to Chicago and other mid-western cities and the little ones to New York where they will pay a higher price for the smaller nuts than they will for those of a larger size. It is believed that the eastern people know that their native chestnuts which are small, are better than the large imported ones and they naturally expect any large chestnuts to be poor in quality."

The Indian meal moth is a native of the Old World. It is now found everywhere, and, indeed, its food habits and adaptability to varying conditions have assured an almost universal distribution.

About five years ago a medical friend of mine who is particularly fond of chestnuts usually had a pocketful of them. He was making a call in the hotel where I lived, and while he was talking, continued to eat chestnuts which he took from his pocket. After the meat had been extracted satisfactorily, he threw the shells into a metal basket. The appearance of a small worm on his coat attracted attention. His chestnut pocket was examined and found to contain innumerable small larvæ. By the time the waste basket was emptied on the following morning, many other of these little worms were found crawling about in the basket, on the sides and in its immediate neighborhood. These were undoubtedly the larvæ of the Indian meal moth, for the curious webbing effect was observed wherever the little worms had crawled.

If the two maps are examined, the one of Italy and the other of the United States, the area of pellagra in each country is very definitely shown. It seems reasonable to conclude that the chestnut blight which my friend Rowlee had studied so intensively may account for the importation from Italy of the chestnuts which in that country, as in this, are so subject to invasion of this particular insect pest.

As early as 1892, the manufacture of "bar candy" containing peanuts had begun, and since the war the bar business overtops any

other division of the nation's $300,000,000 per year confectionery trade. Since this particular moth infests raisins and dried fruits as well as all varieties of nuts, the distribution throughout this country of such possible insect carries is reasonably certain.

It is to be noted that the recorded cases of pellagra, in any considerable number, in various parts of this country, correspond in time very closely with the importation of chestnuts from Italy and of peanuts from Spain. Either one or both might readily serve as the means of the introduction of the Indian meal moth in the United States. The trade conditions, which I have mentioned, readily explain the enormous incidence of pellagra in the southern states, which in latitude, climatic conditions and food-habits correspond closely with those of Italy and Spain. Corn bread in the South becomes polenta in Italy and Spain, where it is the common food of the laboring classes, because of its cheapness and ease of preparation. "Poverty, Polenta and Pellagra," a phrase used by former writers on the subject, is a very apt summary of the conditions which favor this disease. The casual occurrence of pellagra in this country, from Massachusetts to California, may also be referred to the same contributing factors.

The question naturally arises, why should this particular insect pest be regarded as the definite cause of pellagra? There are many other insects, classified as "stored-grain pests." Probably even more common than the Indian meal moth is the Mediterranean flour moth, *Ephestia kuehniella* Zell., and often the common meal snout moth, *Pyralis farnials* L. Fig 22. The reason for my belief that the Indian meal moth is a responsible factor depends upon the fact, easily observed, that the larvæ of the other moths which I have just mentioned *do not leave behind them the trail of fine webbing* which is so characteristic of the larva of the Indian meal moth. If a person were to be given a diet containing finely chopped particles of cotton or of hemp or any other similar vegetable fibres composed practically of pure cellulose, these fibres would remain undigested and unchanged and would be found in the excreta. These are purely vegetable products. Other vegetable products have most extraordinary effects in certain individuals. One of my patients was made seriously ill every time she had eaten the common potato even in the attenuated form of potato soup. Another patient from Japan was equally susceptible to rice in the most minute quantities. A single rice cake of wafer-like thinness was sufficient to produce serious symptoms. Certain animal products are well known to have deleterious and even poisonous effects when brought into contact with the human system externally or internally. A boy friend of mine had to procure the special privilege of wearing a straw hat as a Boy Scout, since every time he wore the standard felt hat, the rabbit's hair of which the felt is composed would make him seriously ill. You will also remember my "Tale of Two Cities" in which an ordinary green parrot was the means of disrupting two families, the one in Brooklyn and the other in New York. When the parrot was disrupted and the stuffed bird used as an ornament in my office, two victims became and remained perfectly well. Another case equally spectacular was that of a sea captain whose quartermaster fished for albatross on a sailing voyage to Para. A dozen of the birds were caught, plucked, and a feather pillow and coverlet made for the captain and the chief officer. The pillow of my patient was brought to my office and when it was opened, the unsuspecting victim nearly died. I have reported each one of these cases in detail at various meetings of this Association. Many other instances can be cited to illustrate the fact that certain animal and vegetable products in certain individuals are followed by various forms of disorder affecting the digestive tract, the nervous system, the skin, and other parts of the body.

The trail of what is essentially an extremely fine silk of animal origin, so characteristic of the larvæ of the Indian meal moth, produces masses of material in various food stuffs, peanuts, chestnuts, and Indian corn in particular. Its presence often times is either not

suspected or is ignored. It is so delicate as to be almost imperceptible unless it is collected in large masses. Who knows what deleterious results may be occasioned by the ingestion of this extremely fine animal product continued as an article of food for a relatively long period of time. It may be digestible and produce a toxine eliminated through the kidneys or through the skin. It may cause intestinal disturbances from its mechanical irritation. It may be poisonous in itself when taken in considerable quantities through many years of life. All of these are questions which must be determined in the future.

If my theory be correct, investigations could easily be made to cultivate this moth, as my classmate, Tyler Townsend cultivated the "ghost gnat" in Peru, and then by a series of experiments, it should be possible to determine whether Indian meal containing the silk threads that have been described would produce pellagra if it were fed to various groups of animals. Monkeys, such as were used by Townsend in his experiments at Choisica, will probably simulate human conditions far better than guinea pigs, rabbits, or dogs.

Jean Henri Fabre was a man of modest, humble character, but profoundly devoted to a search for the truth. His home, called "Harmes" in the little village of Séignan twelve miles north of Avignon, has been a veritable shrine. Victor Hugo in appreciation of Fabre called him "The Homer of the insects," while Edmund Rostand in a subsequent eulogy, spoke of the man as "The Virgil of insects." Neither title is adequate, for each expresses but one of Fabre's gifts; namely, that of a story teller and writer, thus failing altogether to convey any notion of his other great qualities, his transcendant conception of observing the ways of nature. All students of entomology are filled with an overwhelming sense of gratitude to this man for the inspiration of his life, his infinite patience, his work, and the style with which he clothed his ideas. Of the latter, Fabre himself has been moved to say:—"Others again have reproached me with my style, which has not the solemnity, nay, better, the dryness of the schools. They fear lest a page that is read without fatigue should not always be the expression of the truth. Were I to take their word for it, we are profound only on condition of being obscure. Yes, my pages, though they bristle not with hollow formulas nor learned smatterings, are the exact narrative of facts observed, neither more nor less."

15 Central Park, West.

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RHEUMATIC HEART

"The heart of a child is a marvelous thing. Though delicately constructed it is capable of an enormous amount of work which is essential to life," writes Dr. Paul D. White in "The Heart of a Child," an article in *Hygeia*.

What heart troubles affect children? Functional heart trouble consists of unimportant little murmurs and of disorders such as skipping of the pulse owing to early beats, rapid beating, slow beating, shortness of breath and pains in the region of the heart. The most important type of heart disease in children, because it is by far the most common and crippling kind, is rheumatic heart disease, which follows rheumatic fever, St. Vitus' dance and sometimes tonsillitis or other less definite rheumatic infections. It is obviously the chief point of attack in the campaign against heart disease in childhood.

Especially is there a danger that the mind and spirit will be depressed when the body of the child is diseased. The returns from the care one expends to develop the spiritual heart of the child are astonishingly worth while and make one wonder often at the stupid neglect of this side of childhood that has so permeated society in recent years.

By discipline, encouragement and good cheer, the child with heart disease may even profit by his handicap.

THE TREATMENT OF PLEURAL EFFUSIONS*

By G. H. BARKSDALE, M.D.
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THERE are certain of us who feel that whenever an abornmal fluid, whether serous or purulent, is found within the body that it should be removed at once, regardless of duration, or infecting organism. I do not know nowadays anyone who makes wide and handsome crucial incisions in boils, because we know that it is bad practice. We have learned from the surgeons and pathologists that acute gall bladders and pus tubes should not be operated upon but should be allowed to "cool down," as it is commonly expressed. We know that certain virulent cases of osteomyelitis should be rushed to the hospital, an expression that the laymen like so well to use.

Just why some cases should be left alone and allowed to get well, while others should be allowed to cool down, and yet another group should be rushed to the hospital, embraces a very large part of the sum of medical knowledge, for it has to do with the very fundamentals of physiology, pathology and, most of all, immunology.

I have chosen this afternoon to discuss the treatment of pleural effusions, and I might add that I know of no pathologic condition a proper treatment of which demands more consideration of the fundamental principles just referred to.

It is surprising how often pleural effusions are overlooked. Generally, I believe, because the busy man in getting the day's work done does not look for it. I was amused to read the following from the *British Medical Journal*. It was a coroner's report of an inquest on a man who died under an anesthetic, in a London teaching hospital. He was being operated on for gall stones: "There was a large amount of fluid in the chest, but it was not discovered. It ought to have been but it was not. This man had died under an anesthetic, administered for the purpose of an operation for a disease from which he was not suffering. It is a case of a mistaken diagnosis." And, secondly, many of us still stick to the old text book descriptions of the physical findings in pleurisy with effusion, such descriptions in the main being as fallacious as they are classic.

I quote again from Dixon's article, for he expresses so clearly my thoughts on the subject: "The chief pitfall in diagnosis, when the patient is really examined, is the old and erroneous belief which still unaccountably persists that breath sounds are invariably absent over an effusion. All that can be said about breath sounds in this condition (and it is not particularly helpful) is that they may be absent, weak, or altered. The stethoscope, in fact, is frequently more misleading than helpful. There are no physical signs, pathognamonic of fluid, for they may all be found in other conditions. It is quite a common mistake for a doctor to think he cannot be dealing with an effusion because he hears loud bronchial breathing over the dull area. If in addition he discovers whispering pectoriloquy, he then feels confident that there is a consolidated lung plus a cavity, yet exquisitely pure whispering pectoriloquy may be heard over an effusion and bronchial breathing is about as commonly present as absent." This teaching, to my mind, should dispose of discussions between doctors as to the necessity of absent breath sounds or what not, for a diagnosis of fluid, for such arguments are futile.

Our problems then in the consideration of a chest that may have fluid in it, are:

(1) Shall we put a needle in?
(2) If we find fluid, should it be aspirated?

* Read before the Central West Virginia Medical Society at Gassaway on January 28, 1932.

(3) When should it be aspirated?
(4) How shall it be aspirated?
(5) What is to be done with the patient after the fluid is removed?

I have a rule the same for pleural effusions that I have for meningitis, that is, when in consultation if the matter of either comes up for real consideration our full duty has not been done until a needle puncture has been done and done then. An x-ray I grant is of value; however, it is never conclusive. A puncture alone can say fluid is there; further, it delivers the fluid for bacteriological and cytological study. When there is any possible doubt, put a needle in. "Far better, a negative puncture too early than a positive puncture too late."

There are certain details of technique which I stick for: Local anesthetic, big needle, incise skin with cataract knife. I feel that the matter of incising the skin is important, in this way the puncture can be made much gentler. If one insists on using a small needle, this preliminary incision, of course, is unnecessary. It is further helpful to press two separate fingers firmly into the interspace you wish to puncture, making the puncture between them. In this way, one notes the very marked upward curve of the rib.

Pleural effusions may be divided into three groups: Hemorrhagic, Purulent, and Clear.

Hemorrhagic Fluids suggest malignancy, though all are agreed that such fluids are about as often associated with tuberculous pleurisy. A diagnosis of malignancy, practically speaking, can not be made from the fluid alone. Cancer cells, however, have been found in such fluid. I have known of a diagnosis having been made on one occasion in this way. The point that I wish to emphasize is that blood in a pleural effusion has no real diagnostic importance.

Purulent Effusions.—If one strongly suspects fluid in the chest, do not hesitate to repeat the puncture, for some reason at times we do not get it, though present. I recall one case, having been the second man to fail to find fluid, while a third man came in later and got it at once. There is, however, a feel to the percussion note in effusion that the trained man should not mistake. This feel justifies what I have just said. The delivery of pus by needle puncture is a brilliant procedure. The diagnosis is confirmed, you have the material in hand from which prognosis, diagnosis and treatment may at once be made, and do not rush for a surgeon. The immediate thing to do is to determine the infecting organism; that is to say, is it pneumococcic, streptococcic, or tuberculous?

Immediate operation whenever pus was found was the rule in the army training camps during the World War. In one camp, out of 85 consecutive cases, the mortality was 84%. The average mortality was 48%—this in young men. These were steptococcal cases. Owing to the work of the American Empyema Commission, which assumed responsibility for treatment in three camps, the mortality fell to 4%, and the essential change they introduced was deferring operation. It has long been an observation that the subacute pneumococcic empyemas do better than those operated upon early. It may be said in summary, and I have drawn this from many sources, that open operation should not be countenanced until the lung process has subsided. This means in pneumococcal cases, never before the crisis, preferably later; streptococcal cases, three weeks or more from the onset of the illness, and in tuberculosis, never. This does not mean that the latter cases may not be aspirated, for at times they may be handled in this way most successfully.

Clear Effusions.—This brings me to my subject proper, which is the consideration of clear, pleural effusion, inflammatory in character, coming on insiduously and apparently without reason. Right here I should like to make one point paramount: all effusions are tuberculous. Those who do not accept this do themselves and their patients an injustice. I do not wish to say that all cases of tuberculous pleurisy develop pulmonary tuberculosis, for only about one-third of them break down and they may do so at once, or even as late as four or five years after the effusion. Often the effusion had

absorbed promptly, the patient having done well, the matter quite well might have been forgotten or in no wise connected with a moderate ailment four to five years previously. Full ten to fifteen years ago, I heard it stated at the Massachusetts General Hospital that they had discontinued research on the etiology of such fluids, for they found practically all of them to be tuberculous. Out of one reported series of 514 such cases, 47.7% finally developed pulmonary tuberculosis. Insiduous dry pluerisies, especially apical pleurisies, covering considerable periods of time, are equally as important as when wet. As a diagnostic sign of pulmonary tuberculosis, pleurisy with effusion is equally as important as hemoptysis, and as has been emphasized repeatedly, pulmonary hemorrhage should be regarded as an expression of pulmonary tuberculosis until proved otherwise. I grant at once, however, that differential diagnosis of fluid in the chest or hemoptysis is always in order.

On finding such a clear fluid, what is to be done about it? Here, as elsewhere, we have those who feel that such effusions should be aspirated at once. Another group feel that practically no such cases should be aspirated. Lung specialists at resort centers are especially prone to look with pity on the home town doctor who aspirated such fluid. It is well to bear in mind that there is something to be said on both sides of the question.

In handling these cases, the following rules seem workable and entirely reasonable. Aspirate—

(1) If a very large amount is found.

(2) If dislocating the mediastinum as shown by x-ray.

(3) If definite pressure symptoms are present, such as dyspnoea, loss of voice or hoarseness, cyanosis, tachycardia, or other heart disturbances.

(4) If on watching the case a week, the temperature gradually steps up or continues to run on a high level.

(5) If after fourteen days of observation, there is no appreciable absorption.

I understand fully that the matter of waiting is much simpler in hospitals and institutions, away from the family. It is undoubtedly hard for the family to understand why the fluid should not be removed if it is the cause of the trouble and the situation is made doubly worse if a consultant who knows nothing about tuberculosis is called in.

The question naturally arises, why should this fluid not be removed at once, regardless of time, etc.? Early removal is meddlesome; it is far better to wait at least a few days to see if the patient won't care for it without interference. He may even be relieved of his pleurisy by its presence and in general feel better. The effusion is to be regarded as the conservative thing to hold apart two inflamed membranes. It is obvious that if the inflamed surfaces are held apart they do not rub each other, thereby aggravating the condition, nor can they adhere, thereby obliterating the pleural cavity with its constant pain and completely removing the possibility of a subsequent pneumothorax, which is quite a consideration. An effusion holds the lungs quiet, giving that prime requirement for the healing of all inflamed tissues; namely, rest. This is doubly valuable if the lung be tuberculous. It is quite reasonable to theorize that if a tuberculous lung be compressed by an effusion, the fluid being suddenly removed, the lung promptly expands. In so doing tuberculous material may well be aspirated into healthy tissue, with a consequent extension of the disease comparable to the unwise manipulation of an infected joint. In any event, there obviously is a very sudden readjustment of the lung tissue, both cellular and fluid, with the collapse of Nature's mechanically protective defenses. I do not wish to stress the matter of non-interference too strongly, for neglected effusion at times undoubtedly produces chest deformity and permanent damage to the lung, and all of us have certainly seen temperatures subside and marked improvement follow aspiration.

In deciding that a clear pleural effusion is to be removed, there are certain practical considerations of technique. The removal of a small amount at times apparently stimulates

absorption. Practically, however, either small amounts should be removed at frequent intervals replacing the volume removed by an equal volume of air, or slowly removing the greater part of the fluid at one time; in either event, replacing the amount removed by an equal volume of air, for it is necessary that the collapsed lung should not be allowed to expand too rapidly for the reasons given. Remember that air is absorbed from the pleural cavity at the rate of 80 to 100 c.c. daily.

Granting that the aspiration has been made, what is to be done with the patient? It is the general opinion that all such patients should be regarded as tuberculous, and should take the cure for a minimum of three months, never forgetting that they have had a pleurisy with effusion which is a serious disease.

Summary.—(1) Pleural effusions should be more closely watched for.

(2) Effusions can not be diagnosed with certainty on physical findings alone.

(3) If in doubt as to the presence of fluid, do not hesitate to put a needle in and repeat if needs be.

(4) Careful technique makes the procedure easier and reduces the incidence of pleural shock.

(5) A bloody fluid has no diagnostic importance.

(6) In purulent effusions, determine the organism; in any event, do not rush in.

(7) Clear effusions as described are tuberculous.

(8) Consider the indications carefully before you aspirate a tuberculous effusion.

THE USE OF SODIUM SALICYLATE AND MAGNESIUM IN THE TREATMENT OF RHEUMATIC FEVER AND ACUTE INFECTIOUS ARTHRITIS *

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THE purpose of this study has been to determine the effects of magnesium when combined with salicylates in the treatment of rheumatic fever and infectious arthritis. A preparation has been used containing approximately three grains of sodium salicylate and two grains of magnesium oxide.† The two effects that were essentially to be determined were the so-called synergistic action between, or the combined separate actions of, salicylates and magnesium; and the action of magnesium on salicylate tolerance. In recent years increasing importance has been given the study of magnesium as a mineral metabolite. The French particularly have made such studies. Not a small literature has developed on the relation of magnesium to the fundamental body processes, reactions of smooth and striated muscle, hemolysis, metabolism and growth, etc., etc. In this paper only the two special effects referred to above are considered.

Literature on Synergism.—The exact nature of the synergistic effects of drugs is not known. The belief in such an effect is largely empirical and hypothetical. Most of the thus-far-published work on such effects with magnesium and salicylates has been done by Barbour and Winter.[1] These authors in 1928, using rabbits, mice, and dogs in their experimental work, came to the following conclusions:—(a) "* * * Combinations of amidopyrine with magnesium chloride in experimental animals exhibit antipyretic synergism. * * *" (b) "* * * Magnesium augments the antipyretic action of sodium salicylate and of aspirin. When given subcutaneously with salicylate to fevered rabbits, the earlier stages of antipyresis are character-

* The author desires to express his thanks for permission to carry out this study on the wards of the Fourth Medical Division at Bellevue and Allied Hospitals, New York.

† The preparation, Magnecylate, was furnished the author through the courtesy of the Calco Chemical Company, Inc., of Bound Brook, N. J.

ized by marked synergism. * * *" Later, Barbour and Winter[2] came to similar favorable conclusions respecting the effects of magnesium with phenylcinchoninic acid. Still later they[3] came to almost similar conclusions with respect to the effects of magnesium with phenacetin. Taylor and Winter,[4] apart from synergistic effects, state:—"* * * In fevered dogs, temperature changes were found proportional to changes in the blood magnesium. Each increase of 2 gm. magnesium per 100 c.c. gave a reduction of about 1 degree F. * * *" In the above references both the oxide and the chloride of magnesium were used to seek synergism.

There is some notice in the literature on the relation between magnesium and cinchophen in the treatment of arthritis. There do not seem to be any clinical reports on the relation between magnesium and salicylates in the treatment of acute rheumatic fever.

The Study.—It was at first believed that by studying two groups of cases (one on salicylates with sodium bicarbonate; the other on salicylates with magnesium oxide it would be possible to arrive at some definite conclusion respecting magnesium synergism. A definite conclusion has been reached; but it is relative and empirical rather than absolute and scientific. A number of problems that have arisen will have to be solved before the real value of magnesium synergism is understood.

I shall first give the method of study and the results obtained in the main groups of cases. These are of rheumatic fever and those borderline cases of acute infectious arthritis that are clinically indistinguishable from rheumatic fever. Cases with detectable myocarditis, or with valvular defects, have been excluded from this study. In cases where magnesium synergism was studied, magnecylate (the preparation of sodium salicylate and magnesium referred to in paragraph one of this paper) was given in the dose of 30 grains each four hours. Where magnesium synergism was not studied, 30 grains each of sodium salicylate and of sodium bicarbonate were given each four hours. Although some European investigators suggest continued salicylate therapy throughout the night as well as the day, this method was not here used; and the doses were given five times in 24 hours.

In a special control group of ten cases, divided into two groups one of which received magnecylate and the other of which received sodium salicylate plus sodium bicarbonate, the writer had at the time no knowledge of which drug was being used. The diagnosis and clinical course study were left entirely with other members of the staff who were not concerned with the special work being undertaken. All these cases sum up as follows:

20 cases sodium salicylate and magnesium oxide;

19 cases sodium salicylate and sodium bicarbonate.

Special control group:

5 cases sodium salicylate and magnesium oxide.

5 cases sodium salicylate and sodium bicarbonate.

The opposing groups showed no essential comparative differences in pulse, temperature and clinical response. Each group showed its proportion of cases of short as well as long duration. The average number of hours, in the two series, from the time of admission to the time of the first normal temperature was approximately the same. Each group showed cases that responded quickly or slowly to medication. Thus a 30-grain dose of magnecylate would seem to be the equivalent of 30 grains of sodium salicylate plus 30 grains of sodium bicarbonate. Or, better still, 150 grains of the one would seem to be equivalent of 150 grains of each of the other two. Although there is here shown a grain-for-grain dosage between the magnecylate and the sodium salicylate, we can not say there is a grain-for-grain equivalence in the therapeutic response because the exact degree of therapeutic response to salicylates is not known. A definite response to salicylates in the pharmacologic sense is not known. If we knew the minimum dose of salicylate that would bring response—either in pulse, temperature, or degree of pain—we could reach

some accurate determination of the merits of the drugs here employed. This aspect of the problem arose after the present study was well under way. It is separate from that of the toxic factors considered below.

Salicylates in one form or another have been used with good results in rheumatic fever for over fifty years. Striecker (1876) in Germany and Germain Sée in France were mainly instrumental in showing the real and undoubted merits of these drugs.[5] The advantages of salicylates have been only empirically determined, however. It is well known that an attack of rheumatic fever has a more or less limited course; and will respond to nothing more than rest and hygiene in the way of therapy. Austin Flint[6] said of rheumatic fever: "Want of knowledge of the natural history of the disease—that is, the history based on the observation of cases in which the disease has been allowed to pursue its course under favorable hygienic circumstances uninfluenced by therapeutic interferences—has heretofore rendered it difficult to judge of the effect of different methods of treatment. My report of thirteen cases, and the report of Dr. Sutton of a larger number, treated with only palliative remedies, show an intrinsic tendency in the disease to end within a shorter period and with a less degree of liability to complications than have been hitherto generally supposed. * * *" Flint, however, felt that salicylates had a definite controlling effect upon the disease. Church,[7] in the Allbutt-Rolleston System of Medicine, says:—"* * * The acute symptoms when uninfluenced by drugs, frequently subside in eight or nine days, and convalescence is established in another ten days. * * *" Church gives the generally accepted view on the effect of salicylates when he says:—"* * * When treated with salicylates the temperature of the patients has seldom remained above the normal after the fourth or fifth day in the hospital, and in a large number it sinks to normal in from forty-eight to seventy-two hours. * * *"

So far as the exact dosage of the drug goes and the method of determining this dosage, there is no unanimity. In contrast to the use of such non-related remedies as digitalis in cardiac decompensation, and ergot in uterine conditions, there is no way of determining for the salicylates how much is needed in a given rheumatic case. Hanzlik[8] in his comprehensive monograph suggests that the dose of salicylates must border on, if not be gauged at, the toxic effect produced in the patient. Lutembacher,[9] on the other hand, thinks excessive dosage unnecessary. Most clinicians seem to wish to avoid, by the use of special forms of salicylates or adjuvants, any toxic effects. Parenteral methods have achieved a small vogue. The problem of whether to gauge dosage by signs of toxicity is still unsettled. Andrieu[5] cites a list of eight authorities who give varying opinions. Thus, he states, Lees finds 30 to 40 gms. daily an effective amount; whereas, Bezancon uses only 8 to 16 gms. daily.

It will thus be seen that it is difficult to determine exactly the helpfulness of magnesium in the control of temperature, pulse and local joint reaction, although the results of this study are suggestive. In this respect there is the need for some method of standardizing salicylate and adjuvant therapy. In addition there is need for complementary studies of varying groups and individual cases on salicylates with and without magnesium. The experimental results reported on animals in the literature referred to above can not be taken as necessarily true of human beings. Among my own cases there has been a separate small group that has shown protracted courses. In these, the change from salicylate, to sylicylate-plus-magnesium, therapy—and vice versa—seemed to be helpful.

Toxicity.—The toxic effects of salicylates have long been stressed. Andrieu[5] describes two types:—(a) small intolerance—"petite intolerance"—characterized by buzzing in the ears, hyperacousis, heavy stomach, nausea, vomiting and diarrhea; (b) great intolerance—"grande intolerance"—characterized by sensory changes, cramps, delirium, high temperature, hallucinations and coma. Danielopolu and his associates[10] describe a pseudo-

intolerance in which the patient has a psychic aversion to all drugs, which brings on a feigned nausea and illness. Great intolerance is rare and commonly believed to be related to specific hypersensitivity. This view, however, is merely hypothetical. Pseudo-intolerance is rare, although I have recently seen a case. It is the small intolerance that is most important clinically. Barbour and Winter[1 2] found in their experiments that magnesium was helpful in lessening toxic effects.

The exact cause of toxicity from salicylates is still unknown. Some have believed it to be acidotic; but Hanzlik[3] doubts whether salicylates can really cause a sufficient acidosis to bring about such effects. Most observers believe the local gastro-intestinal effect to be the chief factor, but there is no proof. Hanzlik does not believe that sodium bicarbonate lessens the toxic effect; yet this helpful effect has as much basis in its empiric history as the effect of the salicylates. Flint[6] strongly recommended the use of alkaline (mixed carbonate) therapy, even without salicylates. An important paper by Danielopolu[10] has recently appeared. This author uses massive salicylate and alkali therapy. Remarkably enough, in 68 cases of rheumatic fever in which there were no cardiac complications, he found no intolerance whatever when massive doses of salicylates—12 to 30 gms. per day given throughout the 24 hours—and sodium bicarbonate were given. He studied the systemic, Cardiac and renal effects. He used salicylates alone and intolerance developed; but when alkali was added the symptoms disappeared. He believes acidosis to be the chief factor in causing such symptoms.

The Present Study.—In this study, cases with recognizable cardiac complications were omitted. Great and pseudo-intolerance did not occur at all. In each of the main groups there was one case of slight gastric distress with the drug given. This could not have been very important, since in one case there was a similar complaint before any therapy was instituted. In this particular patient salicylate and sodium bicarbonate were well tolerated. It would seem then that, apart from any possible synergistic effect, magnesium oxide acts with salicylates somewhat as does sodium bicarbonate. This would go well with the findings of Winter and Richey.[11] These authors found that magnesium oxide and chloride when used with aspirin kept the stomach acidity more nearly normal.

It would seem that it is essentially in cases where there is cardiac involvement—although my study does not concern itself with such cases—that a drug which alleviates toxic symptoms would be helpful. As yet, however, studies center about the non-cardiac cases in which the toxicity seems to be minimal.

Conclusions.—1. It would appear that doses of 90 grains per day of sodium salicylate when combined with magnesium oxide 60 grains give results in acute infectious arthritis and rheumatic fever equivalent to those obtained when doses of 150 grains of sodium salicylate given with 150 grains of sodium bicarbonate are used. However, this does not necessarily mean that the combined drug (magnecylate) is a grain-for-grain equivalent therapeutically to sodium salicylate. Equivalence or non-equivalence of such effects will only be known when clinicians have decided upon the minimal effective dose of salicylate.

2. The toxic effect of salicylates, combined with either magnesium oxide or sodium bicarbonate, is minimal. In this study only moderate doses were employed; and cases with cardiac complications were excluded.

3. Several suggestions are made for the further pursuit of this work.

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ARGENTAFFINE TUMORS OF THE APPENDIX *

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THE argentaffine tumors or carcinoids, as they are sometimes called, constitute one of the most interesting lesions of the appendix. Although these tumors have been described throughout the literature as carcinomata they are unquestionably different from the usual adenocarcinoma derived from the epithelium of the intestinal tract. For this reason it seems proper to emphasize the importance of differentiating them from other malignant tumors of the appendix. The origin of the tumor cells, their infiltrating character and their tendency to form metastases are features which are of the greatest interest to the pathologist.

As far as can be determined from a review of the literature on argentaffine tumors, the first contribution to the subject seems to have been made by Lubarsch[1] in 1888 in a paper in which he described two cases. The small tumors that Lurarsch described were present in the ileum and even though he recognized that they were composed of nests and strands of cells different from the usual adenocarcinoma of the intestinal tract he was content to speak of them as carcinomata.

Numerous cases were reported in the next few years, but very little evidence was brought forth to clear up the problem of the true nature of these tumors even though they were regarded as being strikingly unlike the carcinomata of the intestinal tract.

There was much confusion about the nature of this neoplasm until at a meeting of the German Pathological ociety in Dresden in 1907 Oberndorfer[2] proposed separating them from the carcinomata and calling them "carcinoid," a term he considered desirable and fully justified in view of the fact that he thought the tumors benign in character. Oberndorfer would make no definite statement regarding the origin of the multiple carcinoids, but preferred to consider them as belonging to a general group of malformations.

In order to learn something of the origin of the tumor cells Gossett and Masson[3] in 1914, restudied the chromaffin cells of the intestinal tract by means of the silver impregnation method and found that the chromaffin cells are distributed throughout the gastrointestinal tract, being present in the depth of the crypts of Lieberkühn. They noted that these cells, like those of the adrenal medulla, contain "argentaffine" or silver-staining granules. Gossett and Masson studied the carcinoids by similar methods and found that they were also able to reduce an ammoniacal solution of silver. They therefore came to the conclusion that the cells which compose the tumor are probably identical with the cells of the chromaffin tissue of the paraganglia. Since these tumors arise from chromaffin cells, they are therefore neurogenic in origin. Because the tumor cells contain granules which take the silver stain Masson spoke of the nodules in the appendix as argentaffine

* Presented at a meeting of the Eastern Panhandle Medical Society, Charles Town, June 8, 1932.

tumors. Since our knowledge of these tumors is now much more adequate than formerly it is preferable to speak of them as argentaffine tumors.

The condition is met in the routine pathological examination of appendices, being present in about 0.3 or 0.4 per cent of all appendices removed surgically. Masson reports 50 cases of argentaffine tumors found in examining 1,200 appendices. The tumors are found in those cases with symptoms pointing to an inflammatory condition in the appendix but without any evidence whatever of the presence of the tumor. They are most frequent in the appendix between the ages of 20 and 30, though they may occur at any age from ten days up. These tumors are much more frequently encountered in females than in males.

The tumors are not confined to the appendix but may be found anywhere along the entire length of the alimentary canal from the stomach to the rectum; their favorite situation, however, seems to be the appendix. Next to the appendix they occur most commonly in the ileum. In the appendix the tumor is single but in the ileum it is often multiple.

An appendicular carcinoid may form in the body of the appendix where, in growing, it may cause a stenosis of the lumen with fecal retention, followed by acute inflammation. In 90% of the cases the tumor is situated in the tip of the appendix, 46 of the 50 cases reported by Masson[4] being in this location.

The gross appearance is very characteristic, so that a diagnosis usually can be made from it alone. If the tumor is small, the tip of the appendix is not deformed; if large it is swollen like a pendulum. This swelling is often the only sign of a possible appendicular tumor but sometimes the appearance of tumor is indicated by an opaque, yellowish infiltration of the peritoneal and subperitoneal connective tissue that covers the tip of the appendix. When an appendix containing such a neoplasm is sectioned one sees a yellow ring encircling the organ in the region of the mucosa; or if its growth has progressed further the lumen of the appendix may be entirely obliterated by the moderately firm, yellowish tissue. To the naked eye the muscular layers seem to be almost intact and always recognizable, even though infiltrated and distended by the tumor.

Microscopically, the tumor consists of nests and strands of round and oval cells highly suggestive of a carcinoma. However, although the cells are sometimes grouped about a rather atypical and irregular lumen, there is no true gland-like arrangement. Although usually confined to the mucosa or submucosa, the cells may be found in any portion of the wall of the appendix. The cells lie embedded in an eosin-staining hyaline atroma in which a few small vessels can be seen. The tumor is, therefore, not encapsulated, but has very definite invasive and infiltrative characteristics. The muclei of the cells are round, comparatively large, uniform in size, and rich in chromatin. Some of the cells contain large coarse granules but others, which contain no granules, are full of vacuoles. These vacuolated cells stain red with Scharlach R., indicating that they contain a lipoid material similar to that of the cells of the adrenal cortex and xanthoma cells. It is this lipoid which is responsible for the yellow color of the tumor seen in the gross. When small blocks of the tumor are impregnated with silver nitrate and then treated with ammoniacal silver solution, according to the method of Hasegawa,[5] the tumor cells show in a characteristic fashion the argentaffine granules. These granules are best seen in the cells of the periphery of the cell nests, where they are so abundant as to produce a black zone.

The prevalent view that these tumors are benign in character is erroneous, for metastases are frequently seen. It is true that their growth is slow like that of a basal cell carcinoma, but they are definitely invasive and do metastasize. The matastases are most commonly found in the regional lymphnodes, but the presence of tumor tissue has been reported in distant organs, such as the liver, though the latter cases are extremely rare. In fact, I know of only two cases in

which the presence of such metastatic tumor has been noted in the liver. The first was seen at autopsy by Kindell at the Johns Hopkins Hospital several years ago. The case also showed an adenocarcinoma of the lung with multiple metastases. A nodule found in the intestine was at first glance regarded as a metastasis from the tumor in the lung. However, this nodule was subsequently found to be an argentaffine tumor. A single nodule in the liver, thought at first to be a metastatic growth from the adenocarcinoma of the lung, was proved to have arisen from the argentaffine tumor of the intestine, for both this nodule and the tumor in the ileum stained intensely with silver.

The other case with a metastasis in the liver and the only which I have been able to find in the literature was reported by Gasper[6] in 1930. The primary tumor, which in this case measured about 15 mm. in its largest diameter, was located in the wall of the jejunum, producing almost complete obstruction of the gut and consequent death of the patient. In the mesentery adjoining this region there was found a tumor about the size of a hen's egg which contained the argentaffine tissue.

Microscopic sections from this case were said to show invasion of the blood and lymph vessels in this region by masses of tumor cells. Scattered over the surface of the liver and embedded deeply within its substance were a few nodules of metastatic tumor, the largest measuring about 8 mm. in its longest diameter. The silver impregnation method was applied to all the tumor tissue in this case so that there is no doubt about its true character.

It is clear from these cases that the tumors possess the ability to infiltrate and may even metastasize. Metastases take place through the lymph vessels, although dissemination is said to occur by means of the blood stream. However, their proliferation is slow and metastasis, although only a question of time, is never so widespread as is the case with carcinomata, nor do these tumors cause the profound effects incident to the multiple metastases of other malignant neoplasms. Death from the argentaffine tumors is infrequent and occurs only as a result of some mechanical effect rather than from the effect of the tumor per se.

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POWDERED MILK

Marco Polo tells in an account of his travels how the Mongols, a nomadic people, kept convenient food supplies for many expeditions: "They have milk dried into a kind of paste to carry with them . . . . and when they go on a journey, every man takes some ten pounds of this dried milk with him and of a morning he will take half a pound of it and put it in his leather bottle, with as much water as he pleases. So as he rides along, the milk paste and the water get well churned together into a kind of pap, and that makes his dinner."

This early story of powdered milk is retold by James A. Tobey, writing in *Hygeia*.

Today powdered milk is used extensively throughout the world, but this valuable commodity is of comparatively recent commercial origin.

Practically the entire 88 per cent of water in whole milk is removed. One of the advantages of powdered milk is the possibility of using it in concentrated form. Cleanliness, safety, convenience and digestibility are four other distinct advantages of this type of milk.

BINOVULAR TWINS *

REPORT OF A CASE

By HARRY G. STEELE, M.D.
Bluefield, W. Va.

NO DOUBT every doctor here tonight has delivered several sets of twins in the course of his practice, and is familiar with the diagnostic signs and symptoms of the different presentations and positions in multiple pregnancy.

There are two types of twin pregnancies: (a) binovular and (b) uniovular. The first results from the simultaneous fertilization of two ova; the latter from the fertilization of a single ovum. Binovular twins are the most frequent and occur in the proportion of six to one. Binovular twins may develop from: (a) the fertilization of an ovum from each ovary; (b) the fertilization of two ova from either the right or left ovary.

Differences between binovular and uniovular twins are to be found: (a) in the sex; (b) in development, and (c) in the formation of the placenta and membranes.

Uniovular twins are always of the same sex. Binovular twins may be of the same or different sex. The latter is more common than the former. Twins of the same sex, therefore, may develop either from a single ovum or from two ova. Twins of different sex are necessarily binovular.

Placenta and Membranes. — Uniovular twins, as already mentioned, are always of the same sex and, moreover, they resemble each other strikingly. Uniovular twins are provided with a single placenta and only one chorion, but each fetus has its individual amnion. In the placenta of uniovular twins there is a certain area in which the two circulations intermingle.

With binovular twins the two ova may develop quite separately from each other, so that each fetus may be provided with its own placenta and own set of membranes. If the two ova should be implanted close to each other in the uterus, the two placentæ will probably be closely united and seem more or less fused, apparently forming a single structure. The decidua capsularis then forms a single envelope for the two ova so that the two chorions are apposed where the ova lie in contact. Even with the placentæ thus united, anastomoses never occurs, the circulation of each fetus being distributed and carried on independently of the other.

In brief, uniovular twins have a single placenta in which the fetal circulation communicates, with a single chorionic membrane and two amniotic sacs. Occasionally the apposed amniotic membranes fuse and atrophy, leaving both fetuses in a single cavity. In one variety of binovular twins the placentas are fused, the fetal circulations do not communicate and each fetus is surrounded with its own chorionic and amnotic sacs, while in the other form each fetus has a separate placenta and its own chorionic and amniotic sac.

Therefore, let us decide if the writer is correct in reporting this as a case of binovular twins or not.

Mrs. K. S., American, thirty-three years of age, in her ninth pregnancy. She had had eight previous normal full-term spontaneous deliveries, labors ranging from four to eighteen hours, or an average of twelve hours and thirty-seven minutes course of labor.

From her history there have been no lacerations or repairs, but a moderate relaxation of the vaginal wall was found.

On my first visit, July 31, 1932, her general examination was as follows:

Her menstrual periods had been of the

* Read before the Mercer County Medical Society, Bluefield, on January 26, 1933.

twenty-one day type, of seven days duration.

Day of onset of last period was December 3, 1931, duration seven days with quantity normal. Estimated date of labor, September 10, 1932. Indication of early toxemia was slight nausea and edema of the lower limbs and abdomen.

General appearance fair, blood pressure 132/82. Height 65 inches. Weight about 232 pounds. Head and neck negative. Tonsils small but apparently infected. Teeth, one right molar decayed. Thyroid, right lobe enlarged. A gland above it, on the side of the neck, enlarged to the size of a hickory-nut.

Breasts: Very large and pendulous, veins visible, primary and secondary areola well marked.

Abdomen: Extremely pendulous with walls very thick, especially from the navel to the vulva, where was found a thick apron of fat extending to both anterior superior spines.

The linea nigra was present. Having had several pregnancies the striae were abundant over the lower part of the abdomen and upper part of the thighs. The navel was retracted. The muscular tonicity was flabby.

Height of the fundus was 45 cm. above the pubis, and the uterus was symmetrical. The lie of the fetus seemed to be longitudinal, the presentation vertex and the direction of the fetal back to the right. Fetal heart sounds were not heard at this examination. The uterine souffle was ausculated in the L.L.Q. On account of the patient being so large and having had eight previous spontaneous deliveries it was decided unnecessary to take any of the pelvic mensurations. For some distance around the vulva, half way up to the navel and the upper third of the inner side of the thighs was covered with eczema intertrigo. The vaginal discharge was much increased and mucopurlent in character.

On my second visit, August 20, 1932, she was feeling rather badly, complaining of headache, dizziness, nervousness, insomnia, slight heartburn and gas distention with some pain in the lower half of abdomen. Frequency of micturitions had increased, the patient estimating about three quarts of urine output daily. She said she had slight palpitation of the heart with some sub-sternal oppression. Edema of the lower and upper extremities was much in evidence. She had some slight pain in her left chest. Fetal life was manifested by movements in the abdomen. General appearance was only fair. Blood pressure 168/88. Diagnosis of multiple pregnancy was made. I now obtained the following history of twins in the family connection which made me certain that I was dealing with a multiple gestation.

The mother of the patient had given birth to a set of twins, a boy and an girl. Her sister had one set of twins, a boy and a girl. This patient had been married twice and her present husband's former wife gave birth to two sets of twins. Two were boys and two were girls, and his sister had a set of twin boys.

On my third visit, August 26, her general condition was somewhat improved. The height of the fundus was 55 cm. above the pubis. The circumference of the body at the navel was 141 cm. or 55½ inches. The lie was longitudional but I could not make out the presentations nor the positions. I found one back to the right with fetal heart sounds in the R.L.Q. at the rate of 124 beats per minute. The station of the presenting parts was at the brim of the pelvis. Other fetal heart sounds were not located but the uterine souffle was ausculated in quite an extensive area in the L.L.Q. and elsewhere over the abdomen. Her blood presusre was 135/70.

Record of Delivery.—Labor pains began at 4:00 A.M., August 29, 1932, and when the nurse and I arrived at 8:30 that morning we found the condition of the mother and the fetuses as follows: General condition of the mother good, heart normal, temperature 98 4/5" degrees, pulse 72, B.P. 135/70.

The presenting part of one baby was above the inlet, back to the right, extremities to the left with heart sounds in the R.L.Q., rate 134, quality good, movements present. Pains every three to five minutes and strong.

The patient was scrubbed, shaved, and made as free from germs as it was reasonably possible with lysol solution.

Ether anesthesia was begun, and anticipating a difficult delivery, long gauntlet rubber gloves were put on, and when a vaginal examination was made the cervix was found effaced and dilated about 6 cm. The dilation was completed manually and the entire outlet made large enough for any ordinary size baby to be delivered through.

The membranes had ruptured at 2:00 o'clock that morning. Extending my hand up into the uetrus I found a vertex presentation and a O.D.A. position. An internal podalic version and extraction was performed. Being quite positive there was another baby in the uetrus, a few minutes later, while the nurse was making firm pressure with her hand on the fundus, I inserted my hand into the uterus and found the second baby against the left uterine wall in a breech presentation and a S.L.A. position. In taking hold of the baby's feet I ruptured the bag of waters with my fingers. While extracting this and the first baby the arms were arrested and stripped up over each baby's head.

These were readily overcome by inserting the hand corresponding to the posterior shoulder in the vagina; with this the whole fetal arm was held in splint-like fashion, carried over the face and chest and then finally down to the side of the fetal trunk; the trunk was rotated so that the other arm of the baby lay in the posterior quadrant of the pelvis; it was delivered in a similar manner by my corresponding hand. The shoulders of the second baby were likewise extracted. One-half c.c. of pituitrin was given hypodermically.

The cord of the first baby was tied, clamped, and cut, then the second severed likewise. It was a little puzzling to decide on which cord traction should be made first. I always like to make a little traction on the cord in delivering the placenta. The nurse with her hand making pressure on the fundus uteri, and I making slight traction on one cord, then the other, both placentæ were soon expelled. One c.c. of ergot was administered hypodermically.

One cord was eccentrically inserted into a placenta, size 12x15x2 cm., the other was centrally attached to a placenta, size 24x15x2 cm.

A very small laceration of the perineum, not large enough to suture, was caused by this delivery.

The patient was suffering with very large external hemorrhoids.

All I care to say about the twins is: they were both boys, one weighed nine pounds, and the other eight pounds.

The mother made an uneventful recovery and the boys are growing nicely.

They were discharged September 9, 1932.

The average weight for a boy at five months is 14 pounds 8 ounces. These are a few days less than five months old and one weighs 18¾ pounds, and the other 17½ pounds.

Dystocia Dystropia Syndrome.—There is now a well known anatomical type of woman in whom labor is almost invariably complicated and difficult, so much so that to this individual the term dystocia dystrophia syndrome has been applied. As this patient seems to be classed in that category I will mention some of the points in her case characteristic to that type of patient:

1. She was short and stout.
2. Her neck was stubby.
3. Her chest was broad and short.
4. Her abdomen presented the characteristic fatty apron.
5. Heavy deposits of fat were found on her hips and legs.
6. Her hips themselves were exceptionally broad.
7. The measurements of her pelvis were no doubt above normal.
8. Her skin was pale.
9. During this pregnancy she had a tendency toward toxemia.
10. Her weight was markedly increased during this gestation.
11. The onset of labor in this dystocia dystrophia patient was rather tardy, as she

did not go into labor as vigorously as she might.

12. The membranes of one of the bag of waters ruptured at two o'clock A.M., and she was not disturbed with labor pains until two hours later.

13. Labor would likely have been slow and tedious, had the babies not been delivered by version and extraction.

Cornell recommends abdominal delivery in patients of this type, especially if they are well along in the child-bearing age.

This was out of the question, out there in the country five or six miles from a hospital. I believe most obstetricians would have delivered this woman, under the same circumstances, as was done in this case.

306 Bailey Building.

REFERENCE

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UVURSIN—A DIABETIC NOSTRUM

This article has been prepared from material furnished by Dr. W. M. Sheppe, Wheeling Clinic, Wheeling, W. Va.

QUACK remedies for the treatment of various diseases are widely exploited by unscrupulous manufacturers and extensively consumed by Mr. John L. Public. Although deplorable in principle and depleting to pocket books, the use of many of these so-called remedies does not lead to any dire results. The use of Doan's Kidney Pills in real or imaginary renal ailments is followed by a soul-satisfying excretion of methylene blue and the slightly stained kidneys may be none the worse. Truly, many homes Pinkham's Compound, (alcohol 15%) and all without either helpful of harmful effects on the self-limited disorders of suffering females.

While certain nostrums may be disregarded as relatively innocuous, no such indifference can be vouchsafed toward quack remedies promoted for the "cure of diabetes." Such a substance is "Uvursin," a remedy for the treatment of diabetes which is being widely advertised to the medical profession in West Virginia and elsewhere. Strangely enough, this remedy is advertised to the medical profession only, and if the statements of the manufacturers as to the sales can be accepted, the profession has proven itself as gullible and easily duped as any group of laymen. In the literature accompanying the product the ledger accounts of various physicians have been itemized. It is alleged that one doctor in a town of seven thousand has expended $1,826.40 in the purchase of the nostrum. One energetic practitioner in a West Virginia town of eleven hundred employed $315.00 worth of Uvursin in fifteen months. Another ambitious soul has passed out so many capsules that he is "seriously thinking of specializing in diabetes." In fact, the Fulton Company employs an entire mimeographed sheet to suggest that the purveyors of these capsules may very profitably become "specialists in diabetes." They state that many reasons justify such a step, in addition to the *humane aspects* (italics mine).

Uvursin is apparently very similar to, or identical with, "Fulton's Diabetic Compound" and was apparently in use as early as 1907. The activities of the company were described in a booklet issued by the American Medical Association in 1923 entitled, "Nostrums for Kidney Diseases and Diabetes." In March, 1917, the federal authorities seized a shipment of Fulton's Compound and ordered it destroyed, charging that the claims made for the preparation were "false, misleading and fraudulent, in that no ingredient or ingredients in the said product or compound were capable of producing the therapeutic effects claimed for it."

The activities of the Fulton Company were again discussed in *The American Medical Association Journal* of September 6, 1930.

Shortly before this the federal authorities had again seized and destroyed the product on the basis of a fraud order. About this time the name of the product was changed to Uvursin, which is marketed by the John J. Fulton Company of 88 First Street, San Francisco, California, the makers of the old "Diabetic Compound."

Composition of Uvursin.—The government chemists reported the Diabetic Compound to consist essentially of calcium, nitrates, sulphates, borates and extracts of plant drugs, including bearberry, licorice, salicylic acid, alcohol, and water. Under the heading, "Ingredients and Rationale," the Fulton Company says that Uvursin contains the following substances: Chiamaphilia (Bitter Wintergreen); Uva-ursi (Bearberry); Juglous; Lappa; Inula; Eriodictyon; Zea Maris; Senna; Potassium Nitrate; Sodium Borate; Alcohol and Calcium Sulphate. Surely such a compound should cure diabetes or "somepin'," as Andy would say. Lest some conscientious doctor should feel chagrined by his own ignorance of these mystical drugs, the company hastens to relieve the general embarrassement by stating, "other than the fact that the combined infusions are innocuous, the ingredients as explained below will mean practically nothing, even to the experienced therapeutist." The material itself is a grayish brown powder, tasting strongly of licorice and put up in capsules. Each box contains fifty-six capsules (about a nine-day supply) and costs $1.05 per box. (In justice, we must say that this is much cheaper than most diabetic nostrums.)

Mode of Action.—To quote further: "The results of the late John J. Fulton's researches may be presented as based on three fundamental propositions, viz.:

"(a) The renal filters (the kidneys) are only functioning properly when the diffusion of substances through the secreting renal cells is normally restricted.

"(b) The molecules of the phosphates, urea, etc., etc., that should be eliminated with the renal waste are small.

"(c) The molecules of albumen and sugar found in the eliminations in Bright's Disease and Diabetes, and which in health should be retained to nourish the system, are relatively very large.

"From these considerations arose the belief that in health the waste of albumen molecules was prevented by reason of their relatively large size and hence when found escaping with the urates and phosphates through the renal filter that it was evidence of weakness or lack of restrictive power in the secretive renal cells enfeebled by abuse or disease. And as a corollary of that view, the postulate was unavoidable that if an agent could be developed that would sufficiently restore the tonus and reëstablish the contractility of the relaxed or degenerating renal cells so as to oppose the escape of the large albumen molecules, the same principle must necessarily have a corresponding effect to restrain wasting sugar molecules in Diabetes. No matter how different Bright's Disease and Diabetes are supposed to be, or how far apart the symptoms, treatments and diets are, it seemed, axiomatic that an agent that will oppose the escape of albumen must also oppose the escape of sugar. And as under the postulate formulated above, (that the escape of the large albumen and sugar molecules was in health prevented by reason of the relatively large dimensions of those molecules,) it was obvious that if the contractility of debilitated renal secreting cells could be sufficiently restored to oppose wasting albumen, it must correspondingly oppose sugar waste, experiments in diabetes soon followed and with a slight increase in the strength of the active principle, sugar was found to decrease apparently in the same manner that the original preparation prevents the escape of albumen in Bright's Disease. (Literature on the results in Albuminuria will be mailed on request.)" To this gem of pathological physiology is added the alluring statement that "the very decided aphrodisiac effects" followed the use of this preparation was a new factor. Its action is so definite in this respect that it has been given for this purpose alone

with good results. It is promised that sugar will disappear from the urine in about twenty days. The "treatment" should then be continued for two to three months, to be renewed later if necessary. However, it is implied that this is seldom necessary.

The company, somewhat more reckless than others of its ilk, presents testimonials from physicians telling of good results obtained in diabetic gangrene and even in coma. They are clever enough, however, to let the doctors speak for them in these conditions and recommended the use of Uvursin only by implication. It is noteworthy that the name, "insulin," does not appear in the literature. Frequent references are made to the dread and painful needle and one informed physician writes of the discontinuance of "serum injections."

What Really Happens.—It is, of course, a well known fact that no drug suitable for clinical use exerts any effect whatever on the blood sugar. An attempt has been made to employ synthalin or its derivatives, but all have been found to be too toxic for continued use.

Any and all results claimed for Uvursin are accomplished by a marked restriction of diet. Each package of Uvursin is accompanied by a circular outlining the diet which *must absolutely be followed* in order that the remedy may exert its full effect. This is, of course, the *modus operandi* of all diabetic nostrums. The company states that if the usual improvement is not observed in fifteen days, it is direct evidence that the diet is not being observed. Furthermore, the failures of the treatment are said to be entirely limited to those patients who would not adhere to the diet. The Fulton literature is replete with admonitions that the patient must be held absolutely to the prescribed diet if the desired results are to be obtained. Furthermore, the manufacturers advise in an inconspicuous way that the nostrum should not be given to patients under forty-five years of age, stating that "we have but little confidence as to the character or permanence of the results in young cases." Evidently Uvursin is incompatible with Flaming Youth. The well known tendency of diabetes to improve spontaneously during the latter decades of life is ingeniously made use of.

The diet list found with this product has been analyzed for me by Miss Mildred Kent, the chief dietitian at the Ohio Valley General Hospital. It is extremely limited in scope (although described as liberal) and entirely unbalanced. It contains no milk, fruits, cereals or bread, and the vegetables allowed are practically all in the five per cent class. Miss Kent has prepared this diet and finds that it provides for forty grams of carbohydrate daily. Let us suggest that you select if diabetic of forty-five or over who does not present acute symptoms. Place this patient on a diet containing forty grams of carbohydrate for three weeks. It is safe to say that glycosuria will disappear during this period and rest assured that this result will follow whether Uvursin is taken or is thrown in the garbage can three times daily after meals. Obviously it is undesirable to attempt to restrict a patient to an unbalanced diet containing only forty grams of carbohydrate for any length of time.

Summary — We have presented a brief outline of the activities of the Fulton Company, producers par excellence of diabetic nostrums. The latest offering of this concern is presented as Uvursin, accompanied by information which does not inform and testimonials whose genuineness is as unimpeachable as their value is negligible. It is pointed out that the mode of action of this product is the same as that of all diabetic nostrums, i.e., the strict adherence of elderly patients to a diet of extremely low carbohydrate value. Reputable, but misinformed physicians are being exploited by this company and inveigled by misleading statements into prescribing and recommending this nostrum. The members of this audience are urged to use their collective influence against the exploitation of this so-called "cure for diabetes."

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

The outcome of any tubercular infection depends upon the resistance offered by the body. Whatever subtracts from the patient's physiological resources presumably hinders recovery. Concurrent disease of any kind places a handicap on the tuberculous patient. Syphilis is widely prevalent, tends to be chronic, is often undiscovered, and frequently masquerades as something else. To what extent does syphilis complicate tuberculosis? Oscar Orszagh of Budapest summarizes in "Tubercle" of January 1933, certain statistics, conclusions and implications bearing on the coexistence of tuberculosis and syphilis. The following abstract of his article was prepared by the American Social Hygiene Association.

PULMONARY TUBERCULOSIS AND SYPHILIS

Deaths from syphilis rank high: in England 10 per cent, in France 16 per cent, in the United States 17 per cent, of the total mortality can be traced to syphilis. On the other hand a study of a group of luetic patients in Germany indicated that 26.67 per cent of them died of tuberculosis against 22.5 per cent dying of syphilis. Similarly in Finland of 734 syphilitic patients, 25 per cent died of tuberculosis while only 15 per cent died of syphilis. Post-mortem examinations of 500 cases of syphilis showed that the cause of death was tuberculosis in 10.6 per cent of cases. These and other statistical studies and clinical observations indicate that syphilis hastens the progress of tuberculosis,

Because of the frequent coexistence of tuberculosis and syphilis, it is important that a careful search be made in tuberculous patients for evidences of syphilis. This search should include as an important feature, a careful history with repeated questions on subjects which might bring syphilis to light, as for example, history of primary sore, rashes, miscarriages and family histories. At the Queen Elizabeth Sanatorium in Budapest, only 1.7 per cent of the tuberculous patients having syphilis gave a clear history of this disease, while the total number found to have syphilis on the basis of history, and serological and clinical examinations was 9.3 per cent of all the patients in the sanatorium. It is desirable to examine the blood of the tuberculous patient routinely at least once and preferably oftener and to employ two tests as for example the Wassermann and one of the precipitation tests, bearing in mind always that the blood test may be negative even in the presence of syphilis. Orszagh does not think it necessary to examine the spinal fluid in the majority of cases, a judgment with which the reviewer does not fully agree.

Similarity of Symptoms and Lesions.—A good many luetic conditions are mistakable for tuberculosis. Thus, there may be general systemic manifestation in early syphilis such as loss of appetite, paleness, raised temperature, headache, chest pains, gastric disturbances and jaundice, symptoms which resemble those of tuberculosis. In the secondary stage of syphilis patients may suffer from bronchitis and sore throat. Usually the lymphatic nodes are enlarged especially those of the groin and neck, and enlarged hilar lymph nodes are not rare in syphilis. Chronic syphilitic skin lesions and chornic

syphilitic laryngitis are occasionally mistaken for tuberculosis. Pulmonary syphilis can cause alterations of lung tissue quite similar to those of tuberculosis. Disseminated gummanta may resemble miliary tuberculosis, ulcerated gummata may resemble cavitation of tuberculosis. Histologically the lesions of pulmonary tuberculosis and of pulmonary syphilis may be indistinguishable. It is to be borne in mind that the two diseases may be present in the lung at the same time.

Simple pulmonary syphilis does not occur so often as the clinicians and roentgenologists diagnose it. Neither is it so rare as the pathologists at present take it to be. The diagnostic difficulties are to be overcome only by exact systematic clinical, serological and X-ray examinations. Special significance is attributable to negative sputum, positive

Wassermann, characteristic history and the good effects of anti-luetic treatment in arriving at a working diagnosis of pulmonary syphilis.

Syphilis Delays Cure of Tuberculosis.—Tuberculosis at the Queen Elizabeth Sanatorium gave in general a graver prognosis in the presence of syphilis. The longer the intervening period between the outbreak of the two diseases, the less harmfully does lues influence the course of tuberculosis. In judging the effect of syphilis on tuberculosis it is important to know what the condition of the lung was when syphilis was acquired and whether it has become worse. If the pulmonary lesions are old and healed, or if the patient is in good condition, syphilis as a rule does not affect this condition. But in the case of badly nourished old persons with little capacity for reaction, syphilis can attack the system to such an extent that the latent tuberculosis may be reactivated and become fatal.

In the same way, aggravation may follow fresh luetic infection in the case of persons whose lung trouble was extensive, but which had only showed slow progress till then. If a person suffering from active tuberculosis acquires a fresh luetic infection, and his bodily resistance is weak, then the illness may have a very serious course, though it is also possible that the disease may later calm down and the prognosis become more favorable. Persons suffering from antecedent lues may react to fresh pulmonary tuberculosis infection as healthy persons would. Tuberculosis becomes fatal only if the lues causes lesions which disturb the working and vitality of the whole body, as for example cardiovascular lesions.

Treat Syphilis With Discrimination.—In the case of pulmonary syphilis the treatment of syphilis should be energetic. In the case of pulmonary tuberculosis complicated by syphilis, the treatment of syphilis should be cautious. In the choice of correct doses, the patient's general condition and the character of the pulmonary lesions are extremely important factors. With a weakened constitution, and active recent and exudative tuberculosis, the treatment of syphilis should be delayed until the general tuberculous condition has improved and it should then begin with small doses of bismuth. In the presence of fibrous pulmonary lesions syphilis may be treated safely with larger doses of bismuth, and neoarsphenamine may be used in moderate doses beginning with .15 grams and going up to .45 grams. Surgical treatment of tuberculosis is not barred by the presence of syphilis provided anti-luetic treatment is administered.

Pulmonary Tuberculosis and Syphilis, *Oscar Orszagh, Tubercle, Jan.* 1933.

THE HEART IN INFANCY AND CHILDHOOD

By Raymond M. Sloan, M. D.
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It will be impossible to go into the symptoms, diagnosis, and treatment of the many lesions that occur in the heart of infants and children in the limited time assigned for this paper. I am, therefore, only referring to them in passing and am taking up the question of heart disease as a public health problem and will try to interest you in the question from a preventive standpoint.

Heart disease may roughly be divided into three groups by causes; first, rheumatic; second, syphilitic; and third, degenerative and senescent. Heart disease continues to be the leading cause of death in the United States registration area. Aside from congenital abnormalities, practically every death from heart disease under the ages of forty, which is 25% of all cardiac deaths, is directly traceable to rheumatic fever contracted in childhood.

Among the school children throughout the United States heart disease is fourth among the causes of death. It is much more prevalent in urban than rural communities and more prevalent in the northern communities than here, and the farther south we go the less we see of it. During the past fifty years, deaths from tuberculosis have decreased over 40%, and the number from heart disease has increased over 40%.

Since it is not a reportable disease, the morbidity rate is not known, but it is estimated that for every death there are seventeen people suffering with it; and that, at least, fifteen children out of every thousand have heart disease.

The congenital heart lesions may roughly be classified as a-cyanotic, and cyanotic. Careful examinations of any congenitally malformed heart should be made—to determine the type of lesion or lesions—so that proper instructions as to prognosis and care can be given. We should not merely diagnose these as congenital cardiacs and assume no further responsibility for them.

It is also very probable that we may, by properly advising the parents concerning their general health,

*Read before the Cabell County Medical Society, as a part of the Symposium on Heart Disease, March 9, 1933.

prevent, to a certain degree, congenital abnormalities. We know that congenital malformations are present, if they occur, by the end of the second month of gestation, and are much more likely to occur where there are constitutional or local factors present which diminish the functions of all glands as well as the ovary, and interfere with the proper fertilization, or embedding and growth of the fertilized ovum. For example, endometritis is a local condition interfering with proper embedding and growth. Obesity, anaemia, syphilis, tuberculosis, thyroid insufficiency, nutrition disturbances, marked exhaustion, and mental worries are some of the constitutional factors which temporarilly interfere with and diminish the activity of the ovary and all organs concerned with reproduction. Antenatal correction or improvement of these conditions will lessen the likelihood of abortions, premature births or congenital malformations.

Concerning the much larger and more important group of cardiacs, the rheumatic group, there is much that can be done in a preventive way.

We know that rheumatic fever is a disease made up of a series of acute episodes or attacks, the first usually occurs in childhood, most often between the ages of 6 and 9 years. It is not a disease of the joints and heart only but of nearly all the tissues of the body including the central nervous system. It is probably due to a streptococcic infection, though no specific strain has been isolated and definitely proven as the infective agent, and many claim that it is an allergic phenomenon. In any event, practically all cases show a definite focus of infection with a history of previous infections, and this focus should be eradicated as soon as possible whether it be tonsils, sinus, tooth or whatnot.

The first attack, in the majority of instances, may not have much or any cardiac involvement, and it is in the recognition and proper management of the first indications of rheumatic fever that we can do real preventive work, for after a heart is once seriously attacked, we, at best, may prolong life to forty years, too frequently with invalidism but we can't cure it.

We must bear in mind that there are other manifestations of the disease and patients developing these are classified as potential cardiacs. This group includes: first, the various types of erythema nodosun; second, the ones with attacks or abdominal pain and occasional vomiting, nausea and poor appetite, generally showing a chronic sinus infection or a mucuc colitis; third, those with progressive anaemia, with or without fever; they tire easily and cannot stand as much as the average child, often show fatigue and slight afternoon temperature —are underweight and fail to gain normally— they do better in summer than winter and do better in a warmer climate like Florida, they are frequently considered as tuberculous; fourth, those with so called growing pains, with nervousness; frequently complaining of joint pains which they think are sprains; and fifth, those with chorea.

Early clinical manifestations of rheumatic fever are frequently absent and a child may develop a valvular defect before the classical symptoms appear. We should watch carefully all potential cardiacs and not turn loose a patient that has had an infectious focus removed or that has shown other rheumatic tendencies. We should warn the parents of the possible dangers and have them watch carefully for any fever or any other indications of infection, and report regularly for a thorough check over so that you may detect early any symptoms and signs that point to possibility of rheumatism. When suspected they should be carefully treated and kept under constant supervision.

Of course, there will be many difficulties in carrying out such a program and many parents, either through indifference or ignorance, will not cooperate. However, since we know that practically 25% of all cardiac deaths are directly attributable to this one disease, we as a profession should educate the people to the dangers of rheumatic fever and cardiac clinics should be established for those who cannot afford a private physician. The cardiac cripple should receive the same consideration from the state as one with a crippled leg or back.

I cannot close this paper without a short comment on the care of the heart of the normal, rapidly growing youth. We know that the hearts and other organs of the growing boy or girl do not keep pace with the bones and muscles of the body structure, and are easily overtaxed by extra work thrown on them during a severe illness or violent exertion. It is my personal opinion that there is not a sufficiently careful medical supervision kept over students in Junior High and High schools to prevent serious and probable permanent damage being done to some in the physical educational classes or competitive sports by too violent exertion.

PRESIDENT'S PAGE

On February 28, 1867, Dr. J. E. Reeves mailed to the members of the medical profession in West Virginia the call for the first state medical meeting. It is my duty and pleasure as your executive officer to issue a call at the present time for the sixty-sixth annual state meeting, to be held in Charleston, May twenty-second to twenty-fourth. A very worthwhile program of scientific interest and social pleasure awaits you. In order to emphasize the spirit in which our State Medical Association was organized, I have appended hereto a copy of that original call, sent out over the signatures of our illustrious predecessors sixty-six years ago.

D. A. MacGregor *President.*

Those receiving this Circular will please consider it as a personal invitation to attend the proposed convention.

To The Medical Profession in West Virginia

Gentlemen:

As a means of elevating the standard of practical medicine and surgery in West Virginia and to render quackery odious as it deserves, the want of State Medical Organization is severely felt by all true cultivators of our noble science within the limits of the State.

In West Virginia the profession is at many points adorned by one or more active, intelligent members, who, by their industry and devotion to science, have made for themselves a name outside of their fields of labor; and there are others, too, of modest talent, scattered here and there, who but require the contact and association which a proper organization would surely effect, to develop latent powers and capabilities of great credit to themselves individually and beneficial in the highest degree to the patients and the commonwealth of Medicine.

There is much labor to be performed by the Profession in West Virginia before it can reach the standard of respectability which is its legitimate inheritance in some of the sister states. Disease and death do not relax their hold in favor of our mountains and valleys. On the contrary, some of these are the very strongholds of the enemy, and before his ravages can be stayed, the inhabitants must be taught the laws of Hygiene and be able to mark the difference existing between the true and false —the intelligent Physician and the Murderous Pretender who is everywhere present with the tender of his ignoble service. These important lessons none but competent medical men can teach; and it is high time they should begin the noble work of giving life and health to the people and respectability to themselves.

Organization would necessitate interchange of opinion on subjects connected with the different branches of the profession; and besides the profit and pleasure of regular communications, habits of closer study, and more patient investigation would be encouraged; the demand for Classic and Periodical literature largely increased, and these would be signs of an improved status.

To accomplish all these excellent ends, it is proposed to organize a State Medical Society, and in order to formally initiate the Movement, the undersigned have, upon consultation agreed to issue this call for a convention to assemble in Fairmont on the 20th day of March next. The call is urged upon all members of the regular profession, and their presence in the proposed convention is earnestly solicited. A full attendance is desired, not only on account of the interest connected with the organization of the State Society, but also because the American Medical Association will meet in Cincinnati early in May, and the profession in this State should be represented in it, in accordance with the expressed desire of the Association.

Thos. Kennedy, M. D., Grafton; H. W. Brock, M. D., Morgantown; John C. Hupp, M. D., Wheeling; E. A. Hildreth, M. D., Wheeling; R. H. Cummins, M. D., Wheeling; W. F. Bates, M. D., Wheeling; A. S. Todd, M. D., Wheeling; John Frissell, M. D., Wheeling; G. W. Ramsay, M. D. Clarksburg; J. M. Blackford, M. D., Clarksburg; I. M. Bowcock, M. D., Clarksburg; James E. Reeves, M. D., Fairmont; David S. Pinnell, M. D., Upshur County; G. A. Cracraft, M. D., Triadelphia; J. H. Stoner, M. D., Triadelphia; James Cummins, M. D., Wheeling.

THE WEST VIRGINIA MEDICAL JOURNAL

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DR. DEFOREST'S ARTICLE

Attention is called to the lead article in this issue of the Journal by Dr. Henry P. DeForest of New York City on "Peanut Worms and Pellagra." A portion of the article was deleted by the Publication Committee in order that the entire treatise could be published in one Journal issue. The complete article will be immediately published in reprint form and these reprints may be obtained by writing either to the Journal or to Dr. DeForest, Mayflower Hotel, New York City.

ON TO CHARLESTON

This is the annual Convention Issue of the West Virginia Medical Journal. The completed program for the state meeting to be held in Charleston on May 22, 23, 24, 1933, will be found in the pages that follow. In addition to the program, this issue carries full information regarding hotels and rates, entertainment, the annual golf tournament, technical and scientific exhibits and other features.

The program itself deals with problems of both scientific and economic medicine. The out-of-state essayists who have accepted invitations to our meeting are distinguished leaders in their particular fields of endeavor. Our own members who have been assigned to the state program are expected to contribute a major part in the success of the meeting. It is an interesting observation that many of the best papers ever presented before our Association have been prepared and delivered by our own members here in West Virginia.

The Kanawha Medical Society, through special convention committees, has been at work for the past several weeks on convention plans and details. Parking facilities will be available for all visiting cars on streets in close proximity to the Daniel Boone Hotel. Arrangements for the golf tournament at the Kanawha Country Club have already been completed. A smoker for visiting members and guests will be one of the entertainment features sponsored by the local medical society. The Kanawha County doctors are leaving no stone unturned to make the Charleston meeting the largest and best in the history of the Association.

Indications of an unusually large turnout at Charleston are apparent throughout the state, in spite of the economic depression. It has been pointed out that while the depression was in full blast last summer, the Parkersburg meeting attracted the largest attendance ever enjoyed by an Association convention. This was quite contrary to the experience of most of the other state and national meetings in 1932.

Increased interest in the Association's activities during the past several years has accounted for a constant increase year after year in convention attendance. This year, with many important economic and legal problems confronting the Association, the attendance may even exceed the record registration of 1932.

Again we urge every member who attends the Charleston meeting to bring his 1933 membership card for the registration clerk. The records of the Association will, of course, be immediately available at the registration desk, but a great deal of time and annoyance can be saved for every doctor who has his membership card at hand.

Among the entertainment features of the Charleston meeting will be the annual golf tournament, a dinner for the Fellows of the American College of Surgeons, a luncheon of the alumni of Jefferson Medical College, a smoker on the evening of May 22, an open house gathering at the home of Dr. and Mrs. John E. Cannaday on the afternoon of May 23, and the annual convention banquet and dance on the evening of May 24. The banquet speaker, General J. Tandy Ellis of

Ghent, Kentucky, needs no introduction to the medical profession of West Virginia.

Just one more friendly word. This is YOUR state meeting. A few days away from your practice will do you good. Come to Charleston and rub elbows with your confreres; meet your old friends again; renew old acquaintances. The friendly contacts of your state meeting, together with the assimilation of new thoughts in scientific medicine, will strengthen both you and the Association.

SLOAN VERSUS MITCHELL

One of the most important decisions concerning medical practice ever handed down by the supreme court of this state was rendered during the past month in the case of Dr. Raymond Sloan of Huntington against an unlicensed practitioner named Mitchell who has been practicing in Huntington for the past several months.

The action against Mitchell was brought by Dr. Sloan in behalf of the Cabell County Medical Society, following an unsuccessful effort in criminal court to stop Mitchell's activities. The second action, which went to the supreme court, was instituted in the circuit court of Cabell County. The basis for this action was the contention of Dr. Sloan's attorneys that a license to practice medicine was a property right owned by each individual doctor.

On this theory, Dr. Sloan petitioned the circuit court for an injunction against Mitchell to stop his medical practice. The petition set forth that Mitchell was infringing upon the rights of Dr. Sloan and all other licensed physicians and surgeons in West Virginia, and should therefore be enjoined from further practice.

The state supreme court upheld Dr. Sloan, the syllabi reading as follows:

"The right of a licensed physician and surgeon to practice his profession is a valuable franchise in the nature of a property right to protect which he may sue in equity in the interest of himself and other physicians similarly situated, to enjoin a person from encroaching upon said right by engaging in the practice of medicine and surgery without a state license.

"A court is not powerless to prevent the doing of an act involving encroachment upon valuable franchise rights of others merely because such conduct is denounced as a public offense."

The importance of this decision is far-reaching, because it simplifies the legal steps necessary in the prosecution of quackery. Any licensed physician in West Virginia, under this ruling, may sue in equity for an injunction against any person practicing medicine without a state license. Heretofore it has been necessary to secure a grand jury indictment against an unlicensed practitioner and then go through a trial in criminal court.

It is hoped that this new ruling will create an incentive to each county medical society in the state to rid its particular section of unlicensed quacks. The officers of the various component societies should see to it that this is done. The supreme court ruling is a matter of state-wide interest, but the application of the ruling is an individual matter for each individual county society to handle for itself.

The doctors of Cabell County are to be congratulated for carrying this important case through to a satisfactory conclusion. They have rendered an invaluable service to the people of West Virginia.

NEW COLLECTING SYSTEM

A member of the Association from Taylor County has just advised the Journal of a new and rather unique system of collecting for otherwise worthless accounts. The only drawback to the plan is that it requires the cooperation of the county court; sometimes difficult to secure.

The doctor in question has worked out an arrangement with the Taylor county court in regard to obstetric cases, for which his regular fee is $25. In addition he charges 25 cents per mile (50 cents on dirt roads) on rural calls. Under his plan, if the patient is unable to pay, he secures a note from the husband for $25 payable in labor at the usual county court rate. The doctor then sells the note to the county court for $12.50 in cash.

Under this arrangement, the doctor collects cash for his services, the husband has the satisfaction of paying his bill in full, and

the county court gets the labor at one-half the cost it would ordinarily pay. Although the doctor only gets 50 cents on the dollar, it still sounds like a good system for all concerned.

If any member is interested in securing the name of the Taylor county doctor who originated this plan, we will be glad to furnish it on request.

THE VALLEY CAMP CASE

The suit of Dr. J. T. Nolan against the Valley Camp Coal Company in the circuit court of Kanawha County to restrain the coal company from practicing medicine without a state license is attracting wide attention both within and outside this state. Depositions are now being taken in the case and the evidence will be submitted to the court in the near future. The suit was instituted several weeks ago.

The Valley Camp Coal Company, according to the petition filed by Dr. Nolan, collects a fixed amount from its employees each month for medical service. The company, in turn, employs two licensed doctors to render this service. It is alleged that the amount collected from the employees is considerably larger than the amount paid by the company to the two doctors in its employ. It is further alleged that the Valley Camp Coal Company is a private corporation engaged in the practice of medicine because the balance of money left over after the salaries of the doctors are paid, accrues to the profit of the company.

This system or method of handling medical service has recently become quite prevalent in Southern West Virginia. It is understood that most of the coal companies in the southern part of the state are now using the "check-off" for profit as well as for the purpose of rendering medical service. The individual doctors who are suffering as a result of this system are more or less powerless to help themselves. If they lodge an active complaint, they immediately jeopardize their only means of livelihood.

It is readily apparent that any corporation that sells medical service, whether for a profit or not, is engaged in the practice of medicine. If coal companies can sell medical service to their employees at a profit, there is no logical reason why a private corporation could not be organized for the sole purpose of entering the practice of medicine, and selling medical service to the public at large. Should this develop, then the entire medical profession would shortly find itself in the absolute control of lay corporations.

There is quite a distinction between the old "check-off" system and the new departure of the Valley Camp Coal Company. Under the old plan, all money paid by the employees for medical service went directly into the hands of the doctor or doctors who rendered that service. The company doctors had entire control and supervision over the medical service and they purchased the drugs and supplies necessary in the performance of their duties. Under the Valley Camp Coal Company plan, the coal company is in charge of the medical service, the company purchases the supplies it thinks necessary, it employs doctors who work for the company rather than for the patients, and the company makes a substantial profit from the funds that are supposedly paid for the service of the doctor.

The outcome of the Valley Camp case is awaited with keen interest by the medical profession. The decision should settle, once and for all, whether or not a private lay corporation may sell the services of the medical profession and collect for the same. We do not believe that the courts of West Virginia will allow such a system to continue in existence.

DR. ROBERT WOOD

Dr. Robert Pearl Wood, aged 47, died at his home in Oak Hill on April 16 following a short illness with pneumonia. He was widely known throughout Fayette and Raleigh counties, having formerly practiced in Beckley. He was medical superintendent of the Oak Hill Hospital at the time of his death.

Dr. Wood was born in 1885 and graduated from the College of Physicians and Surgeons, Baltimore, in 1913. He received his West Virginia license the same year and practiced in Raleigh and Fayette counties for 20 years. He was an active and interested member of the Fayette County Medical Society, the State Association and a Fellow of the American Medical Association.

COUNTY SOCIETY NEWS

WYOMING COUNTY

A most interesting meeting of the Wyoming County Medical Society was held at the Mullens Hospital, Mullens, on the evening of March 28. The entire program was confined to a discussion of "Viewpoints on the West Virginia Compensation Law."

There were three different angles to this discussion. The viewpoint of the coal poerators was presented by Mr. W. H. Ruby, the viewpoint of the lawyer was presented by Attorney R. F. Musgrave and the viewpoint of the doctors was presented by various members of the Society.

Ward Wylie, *Secretary*.

CABELL—PARKERSBURG MEETING

A most interesting joint meeting of the Cabell County Medical Society and the Parkersburg Academy of Medicine was held at the Hotel Pritchard, Huntington, on the evening of April 13, with an excellent attendance from both societies.

The scientific program was presented by Dr. O. D. Barker, Parkersburg, on the subject, "Two Interesting Urological Cases"; and by Dr. William R. Goff, Parkersburg, on "The Diagnosis and Treatment of Hypothyroidism." Both of these papers were discussed at considerable length.

Many of the visiting Parkersburg doctors arrived early and were entertained at dinner in the new Doctors' Club in the Hotel Pritchard. A smoker in the Doctors' Club was held following the scientific program.

William W. Strange, *Secretary*.

BARBOUR - RANDOLPH - TUCKER

The regular meeting of the Barbour-Randolph-Tucker Medical Society was held in the Y. M. C. A. Auditorium, Elkins, on the evening of April 28 with an excellent attendance.

The following scientific program was presented:

"Some pertinent Facts Concerning Endemic Internal Parasites." by D. Andrew Shorb, Sc.D., Professor of Biological Sciences at Davis and Elkins College.

"Drugs that have stood the Test of Time," by Dr. O. L. Perry of Elkins.

"Trichomonas Vaginalis in the Kidney Pelvis of the Male," with report of a case by Dr. A. C. Madsen.

A number of important business matters were discussed at this meeting, including the question of whether or not the annual state dues of the Association should be reduced.

Dr. O. L. Perry is now well on the road to recovery following an operation for intestinal obstruction on March 14. Dr. Perry is 71 years of age and an honorary member of the State association.

Russell S. Wolfe, *Secretary*.

KANAWHA COUNTY

The regular monthly meeting of the Kanawha Medical Society was held in the Public Library building, Charleston, on the evening of April 11 with an overflow attendance. The essayist of the evening was Dr. Stuart McGuire of Richmond, who spoke on the subject, "Cancer of the Breast." His paper received a wide and interesting discussion.

The meeting date of the Society coincided with the alumni meeting of the Medical College of Virginia and a large number of distinguished visitors were present, including Dr. W. T. Sanger, President of the College.

Following the scientific program, delegates to the state meeting at Charleston were elected as follows: Dr. G. H. Barksdale, Dr. Francis A. Clark, Dr. R. H. Walker, Dr. E. F. Gott, Dr. Robert King Buford and Dr. M. F. Petersen. Alternates elected were Dr. A. A. Shawkey, Dr. W. W. Point, Dr. A. A. Wilson, Dr. Ray Kessel and Dr. A. W. Milhoan.

M. F. Peterson, *Secretary*.

OHIO COUNTY

Dr. Allen F. Roshell of the University of Maryland, Baltimore, was the scientific essayist at the March 31 meeting of the Ohio County Medical Society which was held in the Solarium of the Ohio Valley General Hospital, Wheeling. His subject was "Osteomyelitis, a Resume of Various Methods of Therapy." This paper was ably discussed by Dr. J. Schwinn, Dr. R. U. Drinkard and Dr. J. O. Rankin.

Russell C. Bond, *Secretary*.

MINGO COUNTY

The regular monthly meeting of the Mingo Medical Society was held at the Williamson Memorial Hospital, Williamson, on the evening of January 11. Officers for the ensuing year were elected as follows: Dr. J. Carl Lawson, president; Dr.

George T. Conley, vice-president; and Dr. Fred Ben Quincy, Secretary-Treasurer.

Three censors were also elected at this meeting. They were Dr. G. B. Irvine for the three year term, Dr. R. A. Salton for the two year term and Dr. O. H. Jennings for the one year term. Dr. Lawson presided at this meeting.

After the routine business, the evening was given over to the discussion of clinical cases. Dr. T. D. Burgess presented a case on "Difficult Labor," which was discussed by Dr. Conley. Dr. H. C. Hayes talked on a case of "Infective Eye."

Dr. Burgess suggested that in the future there be no more regular papers, and that each doctor report on one or two interesting clinical papers. The meeting adjourned at 9 o'clock P. M.

FRED BEN QUINCY, *Secretary*. . .

FAYETTE COUNTY

The Fayette County Medical Society held its regular monthly meeting at the Methodist Church, Montgomery, on April 12, 1933.

Delegates selected for the State Meeting were Dr. George Fordham, Powellton, and Dr. C. W. Stallard, Montgomery. Alternates were Dr. W. E. Bundy, Minden, and Dr. F. S Harkelroad, Harvey.

The scientific program consisted of a paper by Dr. H. McGrath, Montgomery, on "The Relation of the Para-Nasal Sinuses to Systemic Disease."

GILBERT DANIEL, *Secretary*

McDOWELL COUNTY

At the March meeting of the McDowell County Medical Society, the paper of the evening was read by Dr. R. H. Edwards of the Staff of the Stevens Clinic Hospital on "Diaphragmatic Hernia" with a report of a case in a child who was operated at the age of 13 days. This is the youngest case of diagphragmatic hernia diagnosed and on record.

At the April meeting the paper of the evening was read by Dr. T. T. Bagwell on "Acute Back Injuries."

We are glad to note that Dr. W. B. Stevens of the Stevens Clinic Hospital Staff is able to be about again a short time each day.

H. T. SCHIEFELBEIN, *Secretary*.

EASTERN PANHANDLE

The regular quarterly meeting of the Eastern Panhandle Medical Society was held March 8, 1933, in the Gold Room of the Shenandoah Hotel. The guest speaker was Dr. D. A. MacGregor, president of the West Virginia State Medical Association.

Dr. MacGregor gave an interesting discussion of the majority and minority reports of the Committee on "Cost of Medical Care."

He was accompanied by Mrs. MacGregor and daughter.

Routine business of the Society was concluded by the appointing of Dr. J. G. E. Sponseller and Dr. R. B. Talbott as delegates to the annual meeting of the State Medical Association in Charleston. Alternates appointed were: Dr. M. H. Porterfield and Dr. W. A. Wallace.

E. CAMERON, *Secretary*.

MERCER COUNTY

There was a meeting of the Mercer County Medical Society at Bluefield on March 23, 1933. Before the meeting at 6:30 p. m. a dinner was given to Dr. and Mrs. O. L. Miller of Charlotte, N. C., which several doctors and their wives attended.

The medical society convened for the scientific and business meeting at 8:15 p. m. Application for Dr. C. M. Dunlap of McComas, W. Va., was received and he was elected to membership.

The following committee on Public Health and Legislation was appointed: Dr. B. S. Clements, Matoaka; Dr. R. O. Rogers, Bluefield and Dr. A. H. Hoge, Bluefield.

The program committee for the months of April, May, June and September was appointed as follows: Dr. J. M. Markell, Princeton; Dr. Uriah Vermillion, Athens; and Dr. J. R. Vermillion, Princeton.

The following papers were then presented: "Incidence and Management of Fractures of the Hip," by Dr. O. L. Miller, Charlotte, N. C.; and "Osteomyelitis" by Dr. D. L. Hosmer, Bluefield, W. Va.

Dr. Miller presented the subject in a very interesting and instructive manner, taking up the injuries to the hip joint as it occurred in the different decades of life. The main portion of his paper dealt with the fracture of the neck of the femur in the aged. He stressed the importance of early reduction in these fractures by the Whitman method.

R. R. STUART, *Secretary*.

LOGAN COUNTY

The Logan County Medical Society held its regular meeting on the evening of April 19th at the

Hatfield-Lawson Hospital, Logan, with 22 members and visitors present. Several business matters were discussed and delegates were elected to represent the Society at the forthcoming meeting of the West Virginia State State Medical Association. The delegates elected were Dr. B. D. Smith, and Dr. Fred E. Brammer, and alternates Dr. C. A. Martin, and Dr. H. H. Farley.

The Scientific program for the meeting consisted of a paper by Dr. J. Edward Hubbard, Huntington, on "The Malignancy of the Jaw and Buccal Mucous Membrane," and an address by Dr. F. Churchill Hodges, also of Huntington, on "Some Practical Aspects of New Growths." Both subjects were well and interestingly presented and freely discussed by several members.

FRED E. BRAMMER, *Secretary*.

CENTRAL TRI-STATE

The next quarterly meeting of the Central Tri-State Medical Society will be held at the Pritchard Hotel, Huntington, on the afternoon of May 18, with prospects of an excellent turnout. The program will be entirely a local one, presented by members of the organization itself. The grogram arrangement has been described as a "home talent show," and a great deal of interest has already been manifested in the selection of speakers and subjects.

The complete program for the May 18 meeting follows:

Dr. Phillip F. Barbour, President of Kentucky State Medical Association

"The Cost of Medical Care."

Discussion:

Dr. D. A. MacGregor, President W. Va. State Medical Association.

Dr. A. H. Hoge, Past-President, W. Va. State Medical Association.

Dr. C. M. Fitch, Portsmouth, Ohio.

"The Effectiveness of Mercury as a Diuretic."

Discussion:

Dr. R. M. Wylie, Huntington, W. Va.

Dr. G. H. Barksdale, Charleston, W. Va.

Dr. Wade H. St. Clair, Bluefield, W. Va.

"Review of Gall-bladder Surgery with Conclusions as to Surgical Procedure."

Discussion:

Dr. J. Ross Hunter, Charleston, W. Va.

Dr. Ben O. Robinson, Parkersburg, W. Va.

"Intestinal Obstruction."

Dr. W. A. MacMillan, Charleston, W. Va.

Discussion:

Dr. C. H. Holzer, Gallipolis, Ohio.

Dr. R. A. Salton, Williamson, W. Va.

Dr. W. S. Fulton, Wheeling, W. Va.

"The Hundreth Case." A discussion of the occasional case which does not responed properly."

Discussion:

Dr. L. H. Winans, Ashland, Kentucky.

Dr. R. J. Wilkinson, Huntington, W. Va.

MONONGALIA COUNTY

Dr. Joseph L. Miller of Thomas, W. Va., was the scientific essayist at the April 4 meeting of the Monongalia County Medical Society, which was held at the Hotel Morgan, Morgantown. His subject was "The Healing Gods, or Medical Superstition." This was a most interesting and instructive paper and was widely discussed by those in attendance.

Prior to the scientific program, a dinner was served at the hotel to the members and guests of the society.

G. R. MAXWELL, *Secretary*.

OBITUARY

DR. JOSEPH B. KIRK

Dr. Joseph Bascumb Kirk, 70 years of age, died at his home in Bluefield on April 19 following an extended illness. He was one of the best known physicians in the southern part of the state, one of the founders of the Mercer County Medical Society and an honorary member of the West Virginia State Medical Association.

Dr. Kirk was graduated from the College of Physicians and Surgeons in 1886 and was licensed to practice medicine in West Virginia the following year. He was in active practice more than 45 years, limiting his work in later years to dermatology. Along with his professional activities he was always concerned with every phase of civic betterment. Although barely under the age limit, he offered his services and served with distinction during the World War.

The esteem in which Dr. Kirk was held by his confreres is best recognized in a resolution passed by the Mercer County Medical Society immediately following Dr. Kirk's death. "The Mercer County Medical Society," read the resolution, "feels keenly the loss of a member whose professional ability, honesty of purpose and exemplary ethical conduct won the highest esteem of his colleagues."

CONVENTION PROGRAM

OFFICIAL CALL

To the Officers, Delegates, and Members of the West Virginia State Medical Association:

The Sixty-sixth Annual Meeting of the West Virginia Medical Association will be held at Charleston, West Virginia, with headquarters at the Daniel Boone Hotel, from Monday May 22, to Wednesday, May 24, 1933.

The Council will convene at 10 o'clock on the morning of May 22.

The House of Delegates will convene at 8 o'clock on the evening of May 22.

The Sections on Surgery, Internal Medicine, Pediatrics and Eye, Ear, Nose and Throat will convene at 1:30 o'clock on the afternoon of May 22.

The General Scientific Assembly will be called to order at 9:30 o'clock on the morning of May 23.

The Annual Address of the President will be delivered on the evening of May 23.

The Annual Election of Officers for 1934 will be held by the House of Delegates immediately following the President's Address on Tuesday evening, May 23.

The Oration on Medicine will be delivered at the general session on Wednesday morning, May 24.

The Oration on Surgery will be delivered at the general session on Wednesday afternoon, May 24.

The registration department will be open at 10 o'clock on the morning of May 22 and will remain open until 8 o'clock the same evening. Thereafter it will remain open from 8:30 o'clock A. M. until 8:30 o'clock P. M., until the close of the convention.

Respectfully,
JOE W. SAVAGE,
Executive Secretary.

ORDER OF BUSINESS

Council.—For the Council sessions, the order of business will be as follows:

Call to order by Council Chairman.
Reports of Standing Committees.
Reports of Special Committees.
Report of Secretary.
Report of District Councilors.
Auditor's Report.
Unfinished business.
New business.

House of Delegates.—For sessions of the House of Delegates the order of business will be as follows:

Call to order by the President.
Roll call.
Reports of Standing Committees.
Reports of Special Committees.
Report of Secretary.
Unfinished Business.
New Business.

TUESDAY MORNING, MAY 23

General Session—9:30 *o'clock*

CALL TO ORDER
Dr. D. A. MacGregor, President.

INVOCATION

ADDRESS OF WELCOME

RESPONSE

"Practical Skin Therapy."

Dr. M. L. Bonar, Morgantown

Discussion:

Dr. R. O. Halloran, Charleston.
Dr. J. E. Hubbard, Huntington.

"Surgery of Upper Abdomen."

Dr. Fred W. Rankin, Lexington, Ky.

Discussion:

Dr. R. J. Wilkinson, Huntington
Dr. T. E. Vass, Bluefield.

"Infections of Blood Stream."

Dr. R. M. Wylie, Huntington

Introduction—terminology—pathlogical anatomy—clinical considerations — diagnosis — treatment — conclusion.

Discussion:

Dr. W. M. Sheppe, Wheeling
Dr. R. J. Condry, Elkins.

TUESDAY AFTERNOON, MAY 23

General Session, Continued

"Proctology; Treatment of Hemorrhoids and Pruritis Ani."

Dr. J. Bankhead Banks, Charleston

Proctology is a field for the man trained in surgery and one having surgical judgment. Treatment of hemorrhoids and pruritis and judgment in selection of treatment to meet each individual case very important. One type of treatment not indicated in all types of hemorrhoids. Value of sacral anesthesia in proctologic operations. Treatment of pruritis ani with special attention to the injection treatment, and the eradication of possible causes of the pruritis.

Discussion:

Dr. G. C. Schoolfield, Charleston
Dr. W. W. Strange, Huntington.

"Tuberculosis in Children."

Dr. H. R. Casparis, Nashville, Tenn.

Discussion:

Dr. Geo. M. Lyon, Huntington
Dr. R. C. Hood, Clarksburg.

"Soft Tissue Trauma."

Dr. Francis A. Scott, Huntington

Soft tissue trauma associated with fractures of long bones, especially dealing with nerve, blood vessel, and muscle injury; the diagnosis and treatment will be particularly stressed.

Discussion:

Dr. C. W. Stallard, Montgomery
Dr. A. F. Lawson, Weston.

"The Prevention of Maternal Mortality From Hemorrhage in Pregnancy and Labor."

Dr. P. Brooke Bland, Professor Obs. Jefferson Medical School

Discussion:

Dr. F. E. Brammer, Dehue
Dr. B. C. John, Morgantown.

TUESDAY EVENING, MAY 23
8 *o'clock*

President's Annual Address

Dr. D. A. MacGregor, Wheeling

(*The Election of officers by House of Delegates will follow the address of the President*)

WEDNESDAY MORNING, MAY 24

General Session (Continued) 9:30 *o'clock*

"Clinical Review of 110 cases of Renal Tuberculosis

Dr. Gordon F. McKim, Cincinnati

The resume of the clinical observation on one hundred and ten consecutive cases of renal tuberculosis encountered in private practice.

Discussion:

Dr. O. D. Barker, Parkersburg
Dr. G. G. Irwin, Charleston.

"Treatment of Secondary Anemia."

Dr. C. C. Sturgis, Ann Arbor, Mich.

Discussion:

Dr. G. H. Barksdale, Charleston.
Dr. O. B. Biern, Huntington.

Oration on Medicine

Dr. J. P. McMullen, Wellsburg.

WEDNESDAY AFTERNOON, MAY 24

General Session (Continued) 1:30 *o'clock*

"Medical Participation in Public Health Work"

Dr. Henry F. Vaughan, Detroit Health Commissioner, Detroit, Michigan.

Discussions

Dr. T. E. Cato, New Cumberland
Dr. George Lyon, Huntington.

"The Chronic Suppurative Ear."

J. W. Downey, M. D., Baltimore, Md.

The chronic suppurative ear can be prevented in most instances by attention in the acute stage. Once it is established it may be divided into a "safe" and a "dangerous" type. The latter is usually only amenable to the complete mastoid exenteration.

Discussion:

Dr. J. E. Blaydes, Bluefield
Dr. G. R. Maxwell, Morgantown.

"Recent Trends in Medical Economics."

Dr. R. G. Leland, Chicago

Discussion:

N. R. Price, Marlinton
Mr. Joe W. Savage, Charleston.

Oration on Surgery

"The Surgeon of the Future."

Dr. W. S. Fulton, Wheeling.

WEDNESDAY EVENING, MAY 24

6:30 *o'clock*

ANNUAL CONVENTION BANQUET

TOASTMASTER—Dr. James S. Klumpp, Huntington
ADDRESS—General J. Tandy Ellis, Ghent, Ky.

SECTION ON INTERNAL MEDICINE

May 22—1:30 *P. M.*

Idiopathic Pneumothorax.

Dr. F. R. Whittlesey, Morgantown

A presentation of the type of spontaneous pneumothorax that is due neither to tuberculosis nor to any other well-recognized pulmonary disease, with discussion of physical findings and clinical course, and report of cases.

Discussion:

Dr. G. F. Evans, Hopemont
Dr. F. A. Brown, Huntington.

Therapeutic Use of Oxygen, Summary of Results in 476 Oxygen Treated Cases at Presbyterian Hospital, New York.

Dr. Alvin L. Barach.

Concerned with a total of 476 patients who have been treated with oxygen therapy, including nasal catheter, oxygen tent and chamber, and comprising mainly results in pneumonia, congestive cardiac failure, acute coronary thrombosis, fibrosis of the lungs, emphysema, and an end-stage chronic pulmonary tuberculosis.

Discussion:

Dr. R. G. Broaddus, Hinton.

Clinical Usefulness of the Electrocardiogram.

Dr. H. R. Sauder, Wheeling

An attempt to evaluate electrocardiographic examination as to its usefulness in reaching a satisfactory clinical diagnosis. This study is based on the analysis of 350 cases.

Discussion:

Dr. W. T. McClure, Wheeling
Dr. A. H. Stevens, Fairmont.

Primary Intrathoracic Tumors, with Report of Cases

Dr. M. I. Mendeloff, Charleston

Condition not rare and frequently over-looked. There may be no symptoms or the symptoms not of sufficient importance to cause careful search for cause of trouble. Four cases reported, two with autopsy reports.

Discussion:

Dr. A. H. Hoge, Bluefield
Dr. W. M. Sheppe, Wheeling

The Newer Outlook on Chronic Arthritis.

Dr. Ralph Pemberton, Philadelphia, Pa.

Discussion:

Dr. W. V. Wilkerson, Montgomery
Dr. A. R. Lutz, Huntington.

SECTION ON SURGERY

May 22—1:30 *P. M.*

Head Injuries.

Dr. A. A. Wilson, Charleston

Discussion:

Dr. W. K. Kappes, Huntington
Dr. W. H. St. Clair, Bluefield.

Endoscopic Revision of the Prostate.

Dr. R. D. Gill, Wheeling

History of trans-urethral surgery of the prostate—indications — advantages — contra-indications — technique and complications—prediction as to the future value of this procedure.

Discussion:

Dr. C. O. Reynolds, Bluefield
Dr. J. C. Mathews, Huntington

Phrenicotomy in the Treatment of Pulmonary Tuberculosis—A Review of 200 Cases.

Dr. R. B. Bailey, Wheeling

An analysis of 139 cases of pulmonary tuberculosis, operated at the West Virginia Tuberculosis Sanitarium, with careful evaluation of 59 cases presenting cavity formation.

Discussion:

Dr. C. E. Smith, Hopemont
Dr. G. F. Grisinger, Beckley.

EYE, EAR, NOSE AND THROAT SECTION

May 22—1:30 *P. M.*

Cholesteatoma.

Dr. A. P. Hudgins, Hinton

Cholesteatoma—with case report of a Bilateral External Cholesteatoma.

Discussion:

Dr. G. A. Smith, Montgomery
Dr. W. A. Marsh, Clarksburg.

Nasal Mechanics.

Dr. S. S. Hall, Fairmont

Discussion:

W. F. Shirkey, Charleston
Dr. F. O. Marple, Huntington.

Uveitis.

Dr. F. W. Beckner, Huntington

Discussion:

Dr. E. C. Hartman, Parkersburg
Dr. W. S. Shepherd, Charleston.

Eye Surgery.

Film by Bausch & Lamb.

PEDIATRIC SECTION

May 22—1:30 *P. M.*

THE WEST VIRGINIA CHILD

Growth and Development.

Dr. Moritz F. Petersen, Charleston.

Prenatal and Maternal Care.

Dr. James R. Bloss, Huntington.

Medical Care.

Dr. Robert Hood, Clarksburg.

CONVENTION ANNOUNCEMENTS

All general scientific sessions of the Association will be held in the auditorium of the Shrine Mosque, directly across Capitol street from the Daniel Boone Hotel.

The Section on Surgery will be in the Shrine auditorium and all other sectional meetings will be held at the Daniel Boone Hotel. All of the sectional meetings are scheduled for 1:30 o'clock on Monday afternoon, May 22.

There will be a meeting of the Association Council at 10 o'clock on the morning of May 22 at the Daniel Boone Hotel.

The House of Delegates will meet for the purpose of transacting business on Monday evening, May 22, at 8 o'clock in the Club room of the Daniel Boone Hotel.

A second meeting of the House of Delegates will be held on the evening of May 23, immediately following the President's Address, for the purpose of electing officers for 1934 and to transact any unfinished business from the previous session.

All members of the Association, their wives and guests are requested to register immediately upon arrival in Charleston. The registration desk will be located in the lobby of the Shrine Mosque. The Womans Auxiliary registration desk will be in the lobby of the Daniel Boone Hotel.

All members who expect to attend the Charleston meeting who have not yet secured hotel reservations are urged to do so at once. The Daniel Boone, the Hotel Kanawha, the Ruffner and the Holley hotels are all recommended and their rates appear elsewhere in this JOURNAL. The Daniel Boone is the Headquarters hotel.

THE SCIENTIFIC ESSAYISTS

Out-of-state speakers who will appear on the scientific program at Charleston on May 22-24 are listed below in the order of their appearance.

Dr. Fred W. Rankin, Lexington, Ky.

Dr. H. R. Casparis, Nashville, Tennessee.

Dr. P. Brook Bland, Jefferson Medical School, Philadelphia.

Dr. Gordon F. McKim, Cincinnati.

Dr. C. C. Sturgiss, Ann Arbor, Michigan.

Dr. Henry F. Vaughan, City Health Commissioner, Detroit.

Dr. J. W. Downey, Baltimore.

Dr. R. G. Leland, Director of the A. M. A. Bureau of Medical Economics, Chicago.

Dr. Alvin L. Barach, New York City.

Dr. Ralph Pemberton, Philadelphia.

The members of the Association who are scheduled to present scientific papers on the Charleston program follow:

Dr. M. L. Bonar, Morgantown.

Dr. R. M. Wylie, Huntington.

Dr. J. Bankhead Banks, Charleston.

Dr. Frances A. Scott, Huntington.

Dr. D. A. MacGregor, Wheeling. (*President's Address.*)

Dr. J. P. McMullen, Wellsburg, (*Oration on Medicine*).

Dr. W. S. Fulton, Wheeling, (*Oration on Surgery*).

Dr. James R. Bloss, Huntington.

Dr. Moritz F. Petersen, Charleston.

Dr. Robert C. Hood, Clarksburg.

Dr. A. P. Hudgins, Hinton.

Dr. S. S. Hall, Fairmont.

Dr. W. F. Beckner, Huntington.

Dr. Archer A. Wilson, Charleston.

Dr. R. D. Gill, Wheeling.

Dr. Russell B. Bailey, Wheeling.

Dr. F. R. Whittlesey, Morgantown.

Dr. H. R. Sauder, Wheeling.

LOCAL COMMITTEES

Dr. G. G. Irwin, President of the Kanawha County Medical Society, has recently announced the appointment of the special convention committees to take charge of various local details in connection with the annual meeting at Charleston on May 22-24, 1933. The general chairman is Dr. M. F. Petersen, Secretary of the Society, and the chairmen of the various sub-committees make up the general committee.

Chairmen of the sub-committees include Dr. R. K. Buford, Entertainment; Dr. R. H. Dunn, Golf tournament; Dr. W. A. MacMillan, Reception and Welcome; and Dr. W. P. Black, Parking and Decorating.

The special reception committee under Dr. MacMillan is composed of Dr. W. W. Point, Dr. R. H. Walker, Dr. B. H. Swint, Dr. R. D. Roller and Dr. R. H. Dunn.

All of the officers and members of the special convention committees have rendered yeoman service to make the Charleston meeting one of the best in the history of the Association. Practically all details have already been disposed of and every thing is in readiness for the arrival of the visiting members on May 22.

THE GOLF TOURNAMENT

The annual convention golf tournament at Charleston is in charge of Dr. R. H. Dunn who will handle this event on behalf of the Kanawha Medical Society. This year's event will be a handicap tournament, as usual, and entrants may play off their rounds at any time from Monday, May 22, until noon on May 24. Dr. Dunn has announced that all handicaps must be certified by the home club professional and turned in before play is begun.

The tournament will be played over the 18 hole course of the Kanawha County Club and a greens fee of one dollar will be charged each participant. Dr. Dunn has announced that practice rounds will not be permitted after noon on May 22. Doctors who desire to feel out the Kanawha course must do so before that time. Each entrant, after completing his official round, must turn in his score to Mr. William Hickman, Kanawha Country Club Professional, and each score must be certified by partner.

At the request of a number of doctors who regularly compete in the Association tournament, Dr. Dunn has stated that any entrant who turns in a score six or more strokes under his official handicap will be automatically eliminated.

The guest speakers from out of the state have all been invited to play in the Association tournament this year and a number are expected to accept. They will be eligible for all prizes except the Championship cup. The prizes, which have already been secured, include golf shoes, golf bag, leather zipper bag, Knox hat, one dozen golf balls, and an electric clock, in addition to the silver championship trophy.

Dr. Dunn has suggested that doctors who arrive on Saturday or Sunday in order to play over the Kanawha course should make their arrangements known to him in advance, so that guest cards can be secured. Otherwise a three dollar greens fee will be charged.

The Kanawha Country Club course is recognized as one of the best in West Virginia. It is in excellent condition and an unusually large number of participants are expected in the Charleston tournament. The club also has splendid dining service.

Charleston merchants who contributed the tournament prizes include The Sport Mart, the Quarrier Street Studia, S. S. Moore and Company, Harmon, Isaac and Martin, the Young Men's Shop and the Diamond Department store.

COMMERCIAL EXHIBITORS

One of the features of each annual meeting of the Association is the technical commercial exhibits sponsored by leading manufacturers and dealers in instruments and pharmaceutical supplies. The exhibits at the Charleston meeting will be displayed in the spacious lobby of the Shrine Mosque, where all of the scientific meetings are to be held. Exhibitors who have already secured space for the coming annual session are as follows:

Gerber Products Company, Fremont, Mich.
W. Va. Public Health Association, Charleston.
Powers and Anderson, Richmond, Va.
Mead, Johnson and Company, Evansville, Ind.
General Electric X-ray Company, Chicago.
Calco Chemical Company, Boundbrook, N. J.
R. B. Davis Company, Hoboken, N. J.
James Picker, Inc., Cleveland, Ohio.
National Drug Company, Philadelphia.
Max Wocher and Son Company, Cincinnati.
Kellog Company, Battle Creek, Michigan.
Mellins Food Company, St. Louis.
Borden Sales Company, New York City.

HEART COMMITTEE MEETING

Dr. R. J. Condry of Elkins, chairman of the Association Heart Committee, has called a meeting of his group for the morning of May 22 at the Daniel Boone Hotel, Charleston. The meeting is scheduled for 10 o'clock. The time and date of the gathering was purposely selected in order to avoid a conflict with any of the regularly scheduled convention meetings.

The purpose of the meeting, Dr. Condry announced, is to arrange a program for the coming year. Dr. William D. Stroud, Professor of Cardiology at the University of Pennsylvania and Secretary of the American Heart Association, will be present and will discuss the importance of organized effort in the study and control of heart disease and the methods of organization, He will also assist in arranging the program.

All members of the heart committee are urged to be present at this meeting.

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

[The Committee on Publication is not responsible for the authenticity of opinion or statements made by authors or in communications submitted to this Journal for publication. The author or communicant shall be held entirely responsible.]

JAMES R. BLOSS, *Editor-in-Chief* . . . . . Huntington

ASSOCIATE EDITORS:

WALTER E. VEST, HUNTINGTON — J. HOWARD ANDERSON, HEMPHILL — C. R. OGDEN, CLARKSBURG — C. A. RAY, CHARLESTON

MR. JOE W. SAVAGE, *Secretary-Business Manager*, Charleston

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PRESIDENT'S ANNUAL ADDRESS*

By D. A. MACGREGOR, M. D.
Wheeling, W. Va.

It is a great privilege to live in this momentous period of our world's history. Revolutionary changes in the governments of the world are at hand. Nations, states and individuals discard old customs, laws and conventions. The sacred ethics of our profession are questioned by a skeptical world.

Soviet Russia presents to the world a gigantic experiment in social, religious and political relations. It may succumb to a malignant growth within its own vitals, or, on the other hand, it may survive to influence the destiny of all of the peoples of the world.

Germany, prostrate after the great war, and fettered by every conceivable device, repudiates her obligations and, ignoring restrictions, rises to claim a place of equality in the councils of the great nations.

France, bled white, bereft of money and men, emerges from the reconstruction period the miserly Shylock of the world, whose treasury overflows with gold, but whose heart quakes with the fear that some day the Huns will be able to retaliate.

And then there is dear, old, smug, gullible, avaricious Uncle Sam, who was "too proud to fight"—who finally sent thousands of his sons into the trenches to "make the world safe for Democracy"—who proudly disclaimed any interest in reparations—who solemnly and hopefully presented bills to his Allies for the goods and money obtained from him, and then, some fifteen years later, realizes that the repayment of these loans would result in an intolerable industrial paralysis in his own country.

Only a short time ago we were imbued with confidence and optimism, and we felt that we could predict with reasonable accuracy the probable course of business development and social changes. One by one prophets have been humiliated; one by one the illusions of the past have been replaced by the cold and unexpected realities of the present.

On the heels of an era of unprecedented prosperity and unbridled speculation, there comes a period of abysmal depression from which we have not as yet emerged. Financial chaos is universal. The rule of action and reaction—the law of compensation—exacts a crushing penalty from all the members of society. No individual escapes—no group or organization is immune. Every financial

*Read before the W. Va. State Medical Association at Charleston on May 23, 1933.

structure is shaken. Only the strongest and most prudent survive. Old business methods, tried and found wanting, are discarded. Codes of ethics are ignored. The sanctity of the contract is nullified under official order. The "wheels of industry" stand idle. The banks cease their normal functions. The old political administration is repudiated. A radical departure from old conservative customs is inaugurated by the newly chosen leader. Many dangerous and futile experiments are tried in an effort to get the economic machine off dead center where it seems to have stopped. A final desperate plan is evolved. Following the inglorious example of many sister nations, our country, glutted with gold like the fabled Midas, abrogates the gold standard, and deliberately embarks upon a plan of credit, if not monetary inflation.

Out of this crucible of calamity there will emerge a different—and, let us hope, a finer code of moral, social and business relations. At present we cannot predict what the outcome will be. Those things which are noble and good, like royal metal, should pass unscathed through the revolutionary fires. Each one of us can contribute his share toward that end by steadfast adherence to his ideals of business and professional integrity. It is with this thought in mind that I wish to review some of our mutual medical problems.

* * * *

In recent years we have heard a great deal of talk about the increased cost of medical care. It is true that the care of illness involves considerably more expense at the present time than it did twenty-five years ago. At the same time, we recognize the fact that there has been a remarkable evolution in the art and science of medicine, beyond that "pulse and tongue" era. The developments in the medical world are comparable to the changes that have taken place in other lines of human endeavor during the same period of time. We have progressed from the horse and buggy stage to the aeroplane era, and the cost of transportation has increased in proportion to the increased cost of medical care. Our homes are filled with modern conveniences unknown to the nineteenth century. The cost of living in a comfortable home has increased many fold. Our amusements are vastly more expensive than were those of our ancestors. As for the cost of government, it has increased much more rapidly than the cost of any of our other necessities.

Why is it that we hear more complaint about the increased cost of medical care than we do about the increased cost of transportation, household goods, amusements and government? I think that the answer lies in the fact that whereas most of these other costs are met on a daily or monthly basis, the calamity of severe illness comes without warning, always at an inconvenient time, and the cost seems inordinately high because it is not spread out over a long period of time.

I think that it is proper to say that the increased cost of medical care is not out of proportion to the increased benefits to be derived from modern medical practice. Not only is there more accuracy and thoroughness in diagnosis and efficiency in medical, surgical and prophylactic treatment, but the hardships of illness itself are mitigated by the conveniences and accessories of the modern hospital. Perhaps the hospital idea has ben carried a little too far. It is necessary for large teaching institutions to be thoroughly equipped with every possible diagnostic and therapeutic appurtenance. At the same time, we know that efficient care for illness can be rendered in small, well managed institutions with a minimum amount of well chosen equipment. There are a great many institutions which occupy a position between these two extremes, in which the overhead cost is materially increased on account of the addition of superfluous equipment for the convenience of doctors, nurses and patients.

Within the last five years, innumerable papers and books have been written and many plans have been suggested dealing with the problem of paying for medical care on an insurance basis. I am not going to bore you by reviewing this subject. You are well aware of the fact that the ideals of conserva-

tive medical practice are opposed to the various schemes that have been advanced for the practice of medicine under an insurance plan, or under a system of State Medicine. The ethics of our profession require that the practice of medicine be carried on in such a manner that each patient able to pay for his service shall have absolute freedom of choice in the selection of his physician and the hospital in which he shall receive care. Common sense dictates that a physician should be remunerated in proportion to the time, effort and ability which is devoted to his work, and that the quality of medical service should not be jeopardized by either inadequate compensation or an excessive number of patients. All of us recognize that the monthly payment plan for medical care is desirable from the standpoint of financial convenience, but, so far, no practical plan has been evolved which will permit us to practice medicine on that basis and at the same time maintain the high standards and ideals of our profession.

We have in this State many examples of contract medical practice or list hospital practice as it is usually called. In many instances this form of practice may rightly be considered a necessary evil for we know of no other way in which isolated groups of laborers could receive necessary medical care. In other instances, a system of contract medicine, is maintained, not so much for the benefit of the employees as for the financial agrandizement of the employers and the contract doctors. However, I want to take this opportunity to say that in certain places medical care of the highest quality is being rendered to list hospital patients, by physicians who are impelled by conscience to treat list hospital patients in the same way they would treat private patients. Unfortunately, this is not the universal rule. Some contract physicians take their obligations very lightly and give the patients a minimum of indifferent attention. Other contract physicians with many more patients on their lists than they are able to care for complain most bitterly of their inability to give proper attention to the deserving. I have talked to many young men in contract work and most of them have told me that they looked forward hopefully to the time when they could get out of contract work and go into private practice elsewhere.

At the present time it does not seem reasonable for us to hope for the abolition of this system of list hospital practice, which is so firmly grounded in West Virginia, but there are two particularly obnoxious outgrowths of the practice, which have been called to your attention previously, and which I wish to reemphasize at this time.

* * * *

The first point is this: *EMPLOYEES SHOULD NOT BE CALLED UPON TO PAY FOR THE MEDICAL AND SURGICAL COSTS OF INDUSTRIAL INJURIES:* It has long been recognized that the employer of labor should bear some responsibility in connection with accidents sustained by his employees while in the line of duty. Prior to the adoption of the Workmen's Compensation Law in 1913, it was usually possible for employers to evade this responsibility by pleading the defense of contributory negligence, whenever an employee sought to recover damages in court.

However, the possibility of being called upon to defend numerous suits for damages on account of injuries was not very pleasing, and employers generally were glad to subscribe to the terms of the Workmen's Compensation Law, which gave them immunity from such damage suits in return for monthly payments into the compensation fund.

The Compensation Commissioner was empowered by the act to pay out of the compensation fund for medical, surgical, and hospital care for injured employees, to provide for a modest funeral in case of death, and to pay out certain cash sums to injured employees, or their heirs in case of death, by way of compensation for disability or death due to industrial accidents.

It is evident from the foregoing that it was the original intent of the Workmen's Compensation Law to have employers pay the cost of medical, hospital, and surgcial care for injured employees, as well as the other benefits

mentioned. Certain industries in our state are evading payment for the medical, surgical, and hospital care of employees who are injured while in their employ. The employee is made to pay this cost himself through payroll deductions. In order to keep his job it is necessary for the employee to submit to these payroll deductions. Usually he does not object to the plan, because the check-off takes care of other accidents and illnesses which occur to him and his family. However, there is at least one industry in the state which removes all of the sugar coating from the proposition and insists upon a check-off from its employees to cover industrial accidents only. If an employee of this company suffers from any illness or accident not connected with his work, he pays for it himself in addition to the check-off.

These employers who evade their responsibilities in connection with industrial accidents remain within the law by virtue of the presence of one certain paragraph (Article A, Sec. 3, Par. c) in our present Compensation Law. This evasion is permissible under the letter of the law, but it is absolutely opposed to the spirit of the law. It is wrong—essentially a dishonest practice!

We are confident that every member of our legislature who fully understands the sinister significance of this particular paragraph will be willing to vote to have it deleted from the law. We strongly suspect that any legislator who understands the situation and votes otherwise is directly or indirectly influenced by the interests which profit from the exploitation of their employees in this manner.

* * * *

The second point which I wish to emphasize is this: *EMPLOYERS SHOULD NOT PROFIT FROM A CHECK-OFF LEVIED UPON THEIR EMPLOYEES FOR MEDICAL AND HOSPITAL CARE.*

My predecessor, Dr. Albert H. Hoge, called this to your attention in his Presidential Address last year.

Among other things he recommended that: "We condemn the method of deducting a certain amount from the employees, paying the physician a salary and placing the balance in the profits of the corporation." It is only fair to require that any amount of money deducted from the employees' salary for medical purposes should be devoted entirely to that end. The corporation which practices such a petty graft as this at the expense of its employees is worthy of our contempt. From the legal standpoint, I am given to understand that they may be enjoined from this practice on the grounds that they are, as a corporation, practicing medicine without a license to do so. Within the past few months, one of our colleagues has taken such action in the courts of this (Kanawha) county. As yet a final decision in the case has not been rendered, but I hope that the result of this litigation will be such as to put a stop to this particular form of racketeering.

* * * *

Reverting to the subject of the cost of medical care, I want to call your attention to the fact that these increased costs have not resulted in any remarkable increase in the individual incomes of physicians. The major charges are due to the increased cost of hospitalization. So far as physicians are concerned, it is worthwhile noting that in the prosperous year of 1929, for every physician with an income of ten thousand dollars or over, there were two whose incomes were under twenty-five hundred. One conclusion quoted from the report of the Committee on the Cost of Medical Care, reads as follows: "Certainly no solution to the problems of medical costs can be reached through a reduction in the average of professional incomes. This average is none too high now to attract a high type of practitioner and permit progress through gradual training and study."

In view of the fact that the hospital charges are such an important part of the high cost of medical care, it is significant that in all parts of our country, various schemes are being tried for the prepayment of hospital bills on a monthly plan. In our own state at least two of our large cities, Charleston and Bluefield, are making experiments along this line.

It is gratifying to note that in the majority of instances, these economic experiments are strictly limited to hospital service, absolutely avoiding any connection with periodic payments for medical care. For the most part, these schemes have been fathered by financial necessity. Even in good times most hospitals have difficulty in collecting sufficient revenue to keep them going comfortably. In these evil days of depression, when nearly every institution is only a few steps ahead of the sheriff, it is easy to understand why hospital executives are eager to embrace this opportunity for a dependable monthly income. In all probability such schemes would not be so quickly espoused in an era of prosperity. In spite of the fact that the policy is dictated by financial necessity instead of philanthropy, it has certain good points to commend it under certain conditions.

In the first place, income derived from this source may be of considerable benefit to worthy institutions in tiding them over these present difficult days. Many potential charity patients will be automatically changed to pay cases. It may be assumed that patients will be better able to pay for their medical and surgical care if their hospital charges have been paid for on a pre-payment plan. In most instances, contracts are limited to groups of wage earners. This limitation insures the regular collection of the monthly fees through deductions from the payroll, and at the same time the collection of these fees is accomplished with a minimum of overhead cost. By dealing with only groups of wage earners, the hospital protects itself against the element of adverse selection to the extent that all members are sufficienly sound in health to be able to work. By the same token, however, this plan works to the disadvantage of the wage earner. If hospital contracts are restricted to employed individuals and the prospective patient happens to lose his job before he is injured, or becomes ill, he is deprived of his hospital insurance just at the time when he needs it most.

There are certain very obvious objections to the prepayment plan for hospital service. When such service is paid for in advance, it is very natural that the subscribers to the plan should seek hospitalization much more freely than otherwise. They are apt to ask for hospital care for very trivial illness and even bring pressure to bear upon the physicians to recommend hospital residence for a general overhauling and upbuilding during vacation periods. It is a part of human nature to seek to utilize all privileges to which we are entitled.

Commercial organizations have been quick to recognize the opportunity for profit in the promotion of these hospital schemes. It is self-evident that the medical profession should stand in solid opposition to the invasion of the medical or hospital field by any commercial group. The very fact that these outsiders appropriate for themselves twenty-five to seventy-five percent of all fees collected condemns the idea. The dollar which is checked out of the working man's salary for hospital purposes should be devoted entirely to that end, making allowance only for that very small percentage which of necessity is required for collection and administration. If the hospitals of any community cannot manage their own pre-payment contracts they had better continue to operate on the old basis without attempting to support a coterie of expensive middle men. Aside from the financial disadvantage of allowing business organizations to manage hospital contracts there is the further objection that such organizers are apt to use high pressure methods upon prospects and sometimes deliberately deceive them as to the benefits and privileges to be derived from entering into a hospital contract. In some instances prospective patients who signed hospital contracts have been led to believe that they and their families were eligible for hospital care for any and all illnesses and that medical and surgical attention was included in this service. When contracts are obtained in this manner dissension and dissatisfaction are inevitable. We would naturally expect a much more frank and honest understanding with contract holders if the hospital organizations deal with them directly.

One very essential point in the development of any hospital plan of this character is that all of the hospitals in the territory served should be included in the plan. Unless all of the hospitals are so included, unfriendly competition will surely develop between the different institutions and their staffs. Under such circumstances the solicitation of contracts will inevitably arise. There will be competitive underbidding and eventually this will mean lower standards of medical and hospital service. Furthermore, the patient is deprived at least to some extent of free choice in the selection of his hospital and physician, if certain hospitals in a community belong to a pre-payment service group and others do not. As I see it, it is absolutely necessary for the welfare of both the patient and the hospitals, for all of the institutions in a given territory to adopt or reject the pre-payment plan for hospital service.

This is a most interesting and valuable experiment. The two major plans of this character in existence in our State are operated on a high ethical plane. In both instances all hospitals in the community served belong to the organization. In both instances there is no attempt to combine pre-payment for hospital care with pre-payment for medical care. In both of the communities served there have been large list hospital contracts, for both hospital and medical care, for many years. It is to be hoped that with the spread of this new idea for hospital service there will be developed a stronger sentiment against the whole list hospital practice with its numerous abuses. I am advised that the hospitals in this city of Charleston have already agreed among themselves to abandon their list practice in and near the city. This is quite a long step forward in the right direction. I want to take this opportunity to commend the hospital executives of the city of Charleston and to congratulate them on the stand they have taken.

* * * *

I would like to discuss with you another subject which has been before us for some time—*THE MEDICAL SUPERVISION OF STATE INSTITUTIONS CARING FOR THE SICK BY A NON-PARTISAN STATE HEALTH COUNCIL.* During the past year, the committee on medical economics of the West Virginia State Medical Association reviewed the report of the American College of Surgeons submitted after the medical survey of the State, made by their representative, Dr. M. N. Newquist. In reference to the hospitals for the treatment of the insane, for the treatment of tuberculosis, the school for the deaf and blind, and the home for the feeble minded, your committee advised as follows: "We believe that all these hospitals and this school should be operated under direct control of the State Health Department. We believe that all these hospitals for the treatment of the insane should be reorganized, so that one of these four hospitals shall be designated and used as a receiving hospital. We believe that this hospital should be equipped and staffed for purposes of diagnosis and classification, and that the remaining three hospitals, or such of them as are needed, be used either for special treatment or for custody of incurably insane persons. We recommend that the Department of Crippled Children be transferred to the State Health Department."

The institutions mentioned above are doing a great and necessary work for the unfortunate members of our state's population. No doubt the heads of these various institutions are performing their duties in a conscientious manner. Their reports to the Governor show a certain pride in their accomplishments. At the same time, as members of the medical profession, we are in a position to appreciate some of the shortcomings of these institutions. We know that under a system of strict medical supervision, with the benefit of the advice of other medical men, the quality of the work done in these institutions could be materially improved. The business problems related to the management of the various institutions very properly belong to those business men who are members of the Board of Control. Professional supervision should be in the hands of professional men.

The care and treatment of the insane is very properly considered an obligation of the State and should be fulfilled in such a thorough, humane and scientific manner that the relatives of a patient committed to a state institution could have the satisfaction of knowing that all reasonable measures for physical and mental treatment are available to that patient.

Our State provides four hospitals for the care of mental diseases. As custodial institutions they afford quite comfortable and satisfactory accommodations for about 3,300 patients. At the present time this capacity is slightly inadequate, but the problem of overcrowding is not serious.

During the last two or three years there have been several important additions to the physical equipment of these institutions. Provision has been made for x-ray study, clinical laboratory examinations, dental and surgical treatment. As yet these facilities have not been utilized to any great extent.

In his last message to the Legislature, Governor Conley accused certain individuals (and I am safe in assuming that these individuals are well known members of our medical profession) of wishing to obtain control of the state institutions for selfish purposes. He referred proudly to the accomplishments of institutions devoted to the care of the mentally afflicted and asserted that the members of the medical staffs are competent and well trained specialists who belong to their county, state and national medical associations. I think Governor Conley was sincere and honest in what he said but the very fact that the Governor of our state, a very intelligent layman, is convinced that our state institutions for the care of the insane are well equipped, efficient, adequately staffed institutions is, in itself, the best possible argument for thorough medical supervision of these institutions.

We hope that our present executive will not be so easily satisfied and that Governor Kump will inquire more closely into the actual situation. We hope that he will avail himself of the facts to be obtained by an unbiased scientific survey which will investigate the facilities for and the use of such measures as: physiotherapy, hydrotherapy, occupational therapy, ketogenic and dehydration routines for epileptics, malarial therapy or other forms of hyperpyrexia for paresis, intensive anti-luetic therapy, including the Swift-Ellis and other modifications and the surgical correction of physical impairments which may be related to mental disease. Furthermore, a careful inquiry into the personnel of the Medical Staffs will probably reveal some interesting facts. When Governor Conley referred to the careful selection of the members of the hospital staffs and said that they all belong to their county, state, and national associations, he could not have known that a psychiatrist employed in one of our State institutions had no license to practice medicine in the State of West Virginia and that he had been refused a license by our State Board of Examiners on more than one occasion.

With regard to the allegation that certain members of our profession desire to obtain control of the appointments of the state institutions, I would like to inquire what possible selfish interest a man would have in any such proposition, unless, perchance he happened to be a politician aspiring to some important state office. When The West Virginia State Medical Association advocates medical supervision of state institutions, we are searching for a plan whereby the standards of our institutions can be elevated and the quality of their service improved. The most that could be expected through supervision by the State Health Council would be a very gradual improvement in medical methods and in personnel. The salaries which are paid by the State to the heads of these institutions and to their staffs are so low that it would be very difficult indeed to find many men of better training or greater aptitude who would be willing to accept the positions. It might be possible to re-arrange the hospital facilities so as to require only a few highly trained psychiatrists, as suggested by the Medical Economics Committee. This might be accomplished by centralizing the diagnostic and treatment work at one point and referring

patients requiring only custodial care to other institutions. Thoroughly trained psychiatrists personally adaptable to institutional life are hard to find. It might be necessary to go beyond the confines of our State for some of the material.

There are many other subjects of medical interest which might properly claim our attention at the present time. It would be of interest to discuss the medical care and hospitalization of the indigent. This should be provided for through taxation. The medical profession has been carrying this self-imposed philanthropy for so long a time that the general public has come to feel that it is the Doctor's duty to render free service to the poor. Properly considered it is the obligation of the entire community. No other profession is called upon to carry such a load.

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I have one thing to say about quackery. At the present time it is possible for a rank faker, as for instance, a man who claims to cure cancer with a private formula, to practice his nefarious business beyond the reach of the law, if he is able to persuade a licensed physician to lend his name and assistance to the plan. Unfortunately, it is usually possible to enlist the assistance of a licensed practitioner for a consideration. Under our present law, it is not possible to revoke the license of a doctor who lends himself to such a scheme. The medical practice act should be so amended that it would be possible to revoke the license of any physician willing to prostitute himself in this manner.

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Another subject of considerable interest to me is the growing tendency of the state and county boards of health to encroach upon the fields of the private practitioners and the private clinical laboratories. In the growth and evolution of the various health departments there is a strong tendency towards State Medicine. I feel very strongly that the activities of the health deparment should be restricted to problems of public health, sanitation and communicable diseases. Any infringement upon the proper domain of the private practitioners should be discouraged.

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The abolition of our state miners hospitals is another subject that might well command our attention. It is my personal belief that there is no justification for operating these hospitals through state appropriations. These institutions have outlived their usefulness for the particular purpose for which they were intended. At this time, when our State treasury is empty and embarrassed by overwhelming debts, the appropriation of state funds for the state miners hospitals is ill advised. The injustice of such appropriations is evident when we consider the number of first class hospitals in our State which maintain charity services with little or no financial assistance from the state.

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This is an era of rapidly changing ideas and ideals. It is good for us to come together for these annual meetings and discuss our problems. The subjects which I have discussed in this paper are not new, but every one of them is of vital interest and importance to the members of our profession. It is well for us to consider them carefully, decide for ourselves what is the right and honest course to pursue. We are not good politicians. We are not able to push medical bills through the legislative mill. However, the weight of our united opinion is powerful, and I have the conviction that, standing together, deciding our problems honestly and unselfishly, the moral influence of our profession will be sufficient to accomplish a satisfactory solution for any of our numerous medical problems.

BIRTH INJURIES

"At least 60,000 crippled children in the United States are the victims of injuries to the brain at birth. The fate of these children is tragic because they are handicapped in their endeavors to learn and to express themselves," writes Dr. Winthrop M. Phelps in "What Can Be Done for the Birth Injured?" an article appearing in the May *Hygeia*.

GASTRIC SYPHILIS*

THE PRESENT STATUS OF OUR KNOWLEDGE, BASED ON A SURVEY OF THE RECENT LITERATURE

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HISTORICAL: It is now ninety-eight years since Andral first described two cases of what he believed to be syphilis of the stomach. He based his diagnosis on the observations that his patients were known syphilitics, that they had severe gastric symptoms, and that they were relieved by the administration of mercury and iodide. Following this there was an occasional reference to the subject, but the next epoch-making contribution was that of Chiari in 1891. He reviewed the literature and, insisting upon a diagnosis on the histological picture only, rejected all reported cases except seven. He added two cases to the seven which he considered authentic and based his contribution on 243 autopsies on persons dying from syphilis. Of these 145 were congenital cases and 98 acquired, each group furnishing one case. While occasional references are found, no further step forward was taken until 1907 when Pater discussed the subject and noted it as the causative factor in a case of pyloric stenosis, the first time this observation had been made.

With the more general use of the roentgen ray as a diagnostic agent and the development of the Wassermann reaction, references to gastric syphilis began to multiply until now they are very common, the *Quarterly Cumulative Index* for the years 1930-31 recording a total of 69 articles. Of these 19 are in English, 17 in French, 10 in German, 8 in each Italian and Russian, 5 in Spanish and one in each Polish and Portugese. Of the articles in English 15 were published in America, 2 in Great Britain and one in each Australia and India. The final step in proving the actual existence of the condition came in 1922 when McNee demonstrated *spirochaeta pallida* in a gastric lesion. Curiously enough, however, this case was not recognized in life, death resulting from perforation while the patient was under observation and a Wassermann reaction had not been done. During the past year, Seale Harris, Jr., worthy son of a distinguished sire, has demonstrated treponema pallidum in a gastric specimen removed at operation. Until the past decade the diagnostic standard had been the microscopic picture and the actual number of accepted cases had been small, but since McNee actually demonstrated the presence of the spirochaete clinical diagnostic criteria have been determined by the work of Eusterman, Lewald, Carmen, Stokes, Herman, and others until now many more cases are recognized than formerly. However, the diagnosis in many of the cases recently reported certainly cannot be considered proven.

Incidence:—Actual organic syphilitic lesions of the stomach must be very rare when we consider the total number of people who suffer from digestive symptoms and the total number of luetics. Obviously it is one thing to have syphilis and digestive symptoms and quite another to have digestive symptoms due to intrinsic gastric syphilis, so much does the stomach reflect symptomatically pathology elsewhere in the body. Fraenkel in forty years' service as pathologist at Hamburg-Eppendorf found only four cases in over 10,000 autopsies. Turnbull in the London Hospital found only one instance in 3,000 post mortems. Symmers at Bellevue, in 4880 autopsies, 314 of which were upon known luetics, found only one case. Schlesinger reports 386 autopsies on known syphilitic bodies with definite gastric involvement in

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only two. Smithies in analyzing 7,545 "dyspepsias" decided clinically that in 26 of them gastric syphilis was present. Moore and Aurelius in a series of 243 patients with a clinical syndrone suggesting gastrolues, made a positive diagnosis in 87 cases. Hill analyzing the records of the Charity Hospital, New Orleans, for the ten years following January 1, 1919, found that out of 209,000 admissions 19% had evidence of syphilis. During this period 228 cases had stomach complaints in which actual gastric lesions were demonstrated either by x-ray, at operation, or at autopsy. Of these 22 presented strong evidence of syphilis, 21 were Wassermann positive and the other one had a positive history and concomitant manifestations of the disease. Follow up and further analysis of this group showed the following: Three cases were proven histologically to be gastric cancer; five others from the clinical outcome were believed to be cancer; six were chronic gastric ulcer with associated syphilis; two were ulcer "affected by syphilis" as judged from symptoms and therapeutic response; five were definitely diagnosed as gastric syphilis, and one did not return for observation and treatment. Out of 35,000 consecutive admissions to the wards at Emory University, Fitts found eight authentic cases, an incidence of one in 4,750 admissions. Singer and Meyer at Cook County Hospital found at operation during six years' observation, four cases which were histologically syphilis although in 5,000 consecutive autopsies covering approximately the same period no case was found. Stokes places the incidence among all syphilitics at approximately six per thousand and in 200 syphilitic patients whose chief complaint was stomach trouble, 8 had actual luetic involvement of the stomach and 12 had non-luetic ulcer. O'Leary states that less than .3% of all syphilitic patients seen at the Mayo Clinic have a structural gastric involvement.

Race incidence has not been well worked out. Of Eustermann's 93 cases only one was colored, but Harris and Youmans, at the Vanderbilt Clinic, report seven cases of which only one was white. In Hill's series of 228 demonstrated gastric lesions, 103 were colored and 124 white. Of the 22 among them who were proven syphilitics, 17 were colored and 5 white; or, in other words, with a demonstrable gastric lesion, in a white man the chances are 1 in 25 that syphilis is a cause or a complication, whereas in a Negro the chances are one in six. Galloways says the condition is frequent in China. Eusterman states it is most common in Russia, and after that country in probable frequency come France, Austria, Germany and England in the order named.

Sex incidence is probably about as in syphilis generally which is usually put at 3 males to 1 female. In Eustermann's series 65 or 70% were men. All Fitts' eight cases were males. However, Stokes says there is no absolute sex predominance. Age incidence is important because of its bearing in diagnosis. Generally speaking the great bulk of the cases fall between 20 and 50, the large group being found in the thirties, or in the fourth decade of life. Of the 87 positive cases reported by Moore and Aurelius, 41 or 44% fell within this age group, and 67 or 77% within this and the succeeding decade. The youngest in the series was 20 and the oldest 60. Eusterman reports the average age as 36, whereas the average for ulcer is 45 and for cancer 54. From these statistics one may conclude then that of hospital admissions generally about one in 30,000 has an organic luetic lesion of the stomach; that one in 300 of those giving stomach trouble as a chief complaint, has such an involvement; that the masculine gender increases the chances three to one and age between 30 and 50 four to one. Singer and Meyer believe that the diagnosis can be made more often at operation than at autopsy, and basing the diagnosis on clinical grounds, that gastrolues is much more common than has been heretofore believed. They hold that there is a tendency to spontaneous recovery with scarring and contraction and that many of the stomachs which at autopsy show scarring so old that the definite cause cannot be assigned by histological study, really represent the end results of treponemal

invasion. They compare our present conception of this condition to the opinion formerly held about duodenal ulcer before the clinician, the roentgenologist and the surgeon demonstrated its frequency to the pathologist. Everything considered, it is probable that the condition is rare although, if we may accept clinical diagnostic standards, much more common than has generally been believed, and certainly syphilis should be considered as a possible factor in every chronic digestive condition presenting itself for study.

Pathology:—Just what the exact intragastric picture is in early syphilis nobody seems to know. Certainly in the febrile type the gastro-intestinal tract shows many symptoms, but probably not more than in other acute febrile diseases, notably influenza and pneumonia. Most observers believe that a syphilitic infection depresses gastric secretion and Smith suggests that this phenomenon may be part of a generalized gastritis due to a spirochetal toxin rather than a localized lesion of the gastric wall, but adds that the lack of mucus in the gastric contents throws doubt upon such a hypothesis. Neugebauer thinks the hypoacidity is due to changes in vagus tone rather than to actual organic mucosal changes, or possibly is an allergic phenomenon. Rosin believes that the gastric mucous membrane shows the same changes as are found in the mouth and pharynx during the secondary stage, but Wile thinks otherwise because of the fact that the treponema invades squamous epithelium much more readily than the columnar variety. Clasen reports erosions and ulcers seen gastroscopically, Rudneiff found at autopsy in the gastric mucosa in cases of secondary syphilis small cell masses resembling skin papillae and in later stages multiple miliary gummas and scars. The various pathological classifications of the lesions found probably depend upon the site and extent of the actual involvement and the stage at which the diagnosis is made and the lesion described. A motion picture of the disease process would probably show the initial change in the submucosa with round cell infiltration and edema, the infiltration of plasma cells and eosinophils, the presence of multinuclear giantcells, perivascular infiltration of lymphocytes and plasma cells; arteritis and phlebitis, at times involving essentially the adventitia, with a lesser involvement of the media; at times involving more specifically the intima and resulting in obliterative vastis; and at other times showing a panphlebitis and a panarteritis. The submucosa is thickened by the infiltration and by connective tissue proliferation, and as this process advances and the mucosal blood supply is interfered with, the mucosal changes begin with atrophy and reduction of the gastric glands and the appearance of small nodules and gummatous plaques of the lining membrane. The lesions become necrotic and erode due to continuing diminution of blood supply, to trauma from food, and to the digestive action of the gastric juice, leaving ulcerated areas larger than those seen in simple chronic gastric ulcer, and with a greater tendency to be multiple. Luria says this ulceration differs from the simple ulcerative process in that in the latter condition, the necrosis occurs primarily without previous infiltration. The luetic ulcers, most often on the lesser curvature, usually have irregular serpigenous borders and firm, smooth bases, with demonstrable thickening of the stomach wall extending for some considerable distance from the ulcer itself, and in resected specimens a fibrinous network is found over the floor of the ulcer. While the origin of the lesion is in the submucosa, it extends in both directions. There is dense connective tissue formation, rich in collagen fibers, and there are extensions of connective tissue from the submucosa accentuating the septa in the muscular layer. Miliary gummata in the submucosa have been described. The muscularis is of normal thickness, but shows marked round cell and eosinophil infiltration. As the condition progresses, the stomach wall becomes thicker and stiffer, showing a diffuse sclerosis of the entire thickness of the wall from proliferation of connective tissue. Atrophy of the mucous membrane is found over areas which had not been ulcerated, and in

further advanced cases contraction of the fibrous tissue gives rise to hour-glass contraction or pyloric stenosis, depending upon the location of the lesion. The typical classic gumma consisting of three characteristic layers, (1) an inner caseous centre of coagulative necrosis, (2) a middle zone of fibrous tissue with a limited number of recently proliferated and infiltrated cells, and (3) an outer layer of younger granulation tissue rich in inflammatory elements, is rarely seen. Instead are found circumscribed foci of granulation tissue densely infiltrated with inflammatory cells, but lacking the central necrosis en masse. This feature probably represents a difference in local response by the stomach to spirochetal invasion as compared with such organs as the brain, liver and testicle where the classical gumma, the gummigeschwulst described by German pathologists, is found, and analogous to the response seen in the aorta and in the periosteum where the classical gummigeschwulst is rarely seen. Of the literature consulted in the preparation of this paper, only one case report showed a close approach to classic macroscopic gumma, that of Graham who resected a stomach containing an unbroken nodule about the size of a hickory nut, which upon section showed the characteristic three layer formation. As to the location of the lesion, there seems to be a predisposition to the prepyloric area. In Moore's series 70% were in this region, 22% median, and 8% diffuse. In the late stages, Baumecker describes the gastroscopic appearance as a rigid shrunken stomach with gummas and atrophy of the mucous membrane.

Symptomatology:—The symptoms are like the symptoms of syphilis elsewhere, manifold and at times bizarre. Rarely do they fall into one of the classical gastro-intestinal symptom pictures, so much so that atypical grouping of symptoms suggests a possible luetic background. Of course the symptoms in a given case depend largely upon the stage of the disease and the type, location and extent of the involvement. One characteristic of practically all symptoms present in a given case is that they are progressive and the clinical course is severe. Bockus and Banks classify four groups:—(1) Cases resembling gastric ulcer; (2) Cases resembling gastritis and acholorhydria; (3) Cases resembling gastric cancer; and (4) Retention cases. Eusterman describes three groups. The first, which might be termed the gastritis group, consisting of 63% of the total number, had epigastric pain or discomfort coming on immediately postcibal from the onset of symptoms. Increase in the solidity of food, or of the amount of either food or fluids caused a proportionate increase in the discomfort. There was a definite progression in the severity of the clinical course. Vomiting and pain were outstanding features, but nausea and anorexia were fairly prominent. The second group of 15% he described as the pseudo-cancer type. The symptoms were gradual in onset but showed definite characteristic progression. Discomfort, which was slight at first, showed inconstant relief from the ingestion of food or alkali. At the onset there was a definite time interval between eating and discomfort, but later it came on more promptly, and as the condition progressed the clinical picture gradually merged with that in the first group. The remaining 22% he describes as the ulcer type because they gave a typical pain-food-ease sequence.

Of the individual symptoms, pain is probably the commonest. It is generally severe, although rarely merely a sensation of discomfort, and progressive in severity. At times it is boring or gnawing and at other times cramping. Usually eating accentuates and vomiting mitigates or affords entire relief. There is no radiation; it is often worse at night, and is usually relieved promptly, completely and permanently by the use of the arsphenamines. Vomiting is common and often severe. Sometimes it comes on with very little preceding nausea, but usually nausea itself is a prominent symptom. Emesis is less likely to follow breakfast than the other two meals and most often follows the evening meal. Usually it affords a measure of relief from pain, and the vomitus rarely contains blood. In the later stages the patient

eats very little before there is a sensation of fullness, at times bursting, which is immediately relieved by vomiting; this being due of course to the actual lessened capacity and the unyielding character of the thickened wall. Anorexia is usually present, but at times the desire for food is retained, though ingestion is avoided because of the increase of pain produced by eating. Weight-loss is the rule, but emaciation is marked only late and after prolonged vomiting. When diagnosed, the average duration of symptoms is two years and of infection twelve years.

Physical Findings:—The physical examination usually yields little of diagnostic value. Other signs of syphilis, especially in the pupils, teeth, tongue, lymphatic glands, bones, liver and spleen should always be looked for. Often tenderness on pressure over the epigastrium can be elicited, and a palpable tumor may be present. Eusterman's series shows such a finding once in five cases although other writers place the incidence as low as one in six. In retention cases a succussion splash is often present and at times visible peristalsis may be seen, especially when emaciation is marked.

Laboratory Data:—The laboratory examinations are of the utmost importance. The blood may show two significant deviations from the normal. Most authors stress the finding of a fairly constant rather mild secondary anemia, but Eusterman reports it as present in only 15% of his cases. The Wassermann reaction is almost constantly positive. Stokes found it so in 37 out of 40 cases. O'Leary reports a negative finding in only 6% of his series and in 73% a positive blood was the only manifestation other than the digestive picture. Smithies found it in all his cases, but he made a positive Wassermann a definite diagnostic requirement.

The gastric analysis reveals anacidity in an overwhelming majority of instances. Eusterman reports the presence of free hydrochloric acid in only 15% of cases and Stokes in 18%. There are probably two reasons for the lessened acidity: (1) The gastritis with the atrophy of the gastric glands, and (2) The rapid emptying time. The latter would appear to be quite a factor inasmuch as the majority of the retention cases show free acidity, some of them with a fairly high reading. In the rare cases showing free acid and no retention the probabilities are that the patient has simple peptic ulcer and concomitant syphilis rather than ulcer due to syphilis. The quantity of contents recovered is usually small owing to the rapid emptying, although when pyloric stenosis is present, the volume may be considerable. Eusterman reported gross retention in 24% of cases. Blood is rarely shown by benzidine and the mucus content is normal. Lactic acid is absent, and Herman has observed that the gastric juice gives a positive Wassermann reaction.

The stool shows nothing noteworthy except that blood is rarely present.

The spinal fluid in cases of actual gastric involvement does not appear to have been very generally studied. At times it may be Wassermann positive, but Stokes believes this to be comparatively rare as he found a positive reaction in only two out of twenty-two cases. He points out in this connection the relative immunity of the central nervous system in the presence of visceral involvement. Either pleocytosis or an increase in globulin content bespeaks an invasion of the central nervous system rather than the digestive, although the presenting symptom complex may be essentially gastrointestinal.

Roentgenologic Aspects:—The roentgen ray does not furnish a definite diagnosis. It does show, however, definite gastric involvement, and some of the features are very suggestive. It is obvious, of course, that the x-ray findings are of very little significance early and that they become more distinctive as the disease progresses. Le Wald has demonstrated that in cases with pyloric stenosis, or with dumb-bell deformity, there is a compensatory dilation of the esophagus, comparable to that seen in cardiospasm and, when it has persisted for some time, is comparatively permanent even after the original causative factor has been relieved by appropriate treatment. The stomach is diminished in size,

showing the so-called microgastria, and there is almost immediate evacuation of contents. The deformity is usually symmetrical, involving a large portion of the prepylorus and mid-stomach, and at times the lesion of the mid-gastric area gives a dumb-bell appearance. Other instances show a small tubular stomach diminishing toward the pylorus, at times funnel shaped, but this type has no x-ray features different from true linitis plastica. Rarely is there an irregular encroachment upon the lumen suggesting a growth into the stomach, and when such cases are seen, the lesion is usually more extensive than carcinoma and smoother in outline. The cap is dilated beyond its usual size owing to a relaxation of the pyloric sphincter, the so-called "gaping pylorus". Under the fluoroscope not only is the barium seen to flow through the pylorus immediately, but the persistaltic wave ends at the involved area, which shows no persistalsis at all, and the diseased gastric wall appears stiffened or with subnormal pliability. In only a small proportion of cases can a mass be palpated corresponding to the lesion visualized under the fluoroscope. Usually no niche, accessory pocket or typical incisura, classic signs of simple gastric ulcer can be made out. The "gaping pylorus" probably accounts in considerable measure at least, for the rapid emptying time.

Diagnosis:—We have already traced the development of diagnostic criteria. The limitation of the diagnosis to only those cases which are proven by the histological picture or by the demonstration of spirochaeta in the tissues certainly seems to be placing diagnosis under a restraining sheet. We do not limit our diagnosis of typhoid or rheumatic heart disease to only those cases proven by the histological findings, but arrive at a conclusion on clinical grounds. Why not, therefore, accept a clinical diagnosis of gastrolues? Certainly, this has been the trend of the last decade, which we might designate the modern era of gastric syphilis. To arrive at a correct diagnosis, the whole clinical picture must be considered rather than any one or two pathognomonic sign-posts. The history should be gone into carefully as well as that of the patient's consort, and it is always to be borne in mind that a positive history is of more positive value than is a negative history of negative value. The age is suggestive but the so-called "cancer age" does not exclude syphilis and vice versa. The pain, the vomiting and the steady progress of the condition are characteristic elements in the history. Other evidence of syphilis in the patient is to be looked for, but when found is only suggestive. Of O'Leary's cases of gastric cancer and syphilis one in six had other clinical evidence of syphilis, whereas only 72% of cases of gastric syphilis had objective findings other than a positive Wassermann. Smith makes the statement that both ulcer and neoplasm occur in syphilitics more often than true gastric syphilis, but does not give percentages. The gastric analysis is of definite importance but may fit in very well with carcinoma, except possibly for the presence of a positive Wassermann in the gastric juice, which feature should be worthy of further study. The Wassermann is of great value, but it should always be remembered that a syphilitic may have cancer, or any other pathological entity for that matter. In fact, Hill's comparative study is very illuminating. Of his series of 228 demonstrated gastric lesions twenty-one, or 9.2% had positive Wassermans. Of 118 consecutive lobar pneumonias in the same hospital, twenty-two, or 18.6%, were Wasserman positive, and of 129 stab-wounds, thirty-eight, or 29.4%, had positive reactions.

The roentgen evidence is of great importance, but while definitely proving an organic lesion of the viscus, only suggests the true diagnosis. Of the x-ray signs, the most valuable are the esophageal dilation, the symmetry of the lesion in the gastric wall, the microgastria, the stiffening of the stomach wall, the absence of persistalsis in the affected area, the rapid emptying and the gaping pylorus.

The general condition of the patient should be considered. Usually the anemia is less marked and the emaciation not so striking as would be the case if cancer had been present

as long as the patient's symptoms have persisted and with as much organic involvement as the x-ray shows. As Herman classically phrases it, "The stomach has cancer, but the patient does not."

High in the scale of diagnostic values, if not indeed at the very top, stands the therapeutic response, but this is not absolute for simple chronic ulcers in a syphilitic, and even cancers, may show marked improvement under specific treatment. On the other hand retention cases at times show a definite accentuation of symptoms. But in general terms prompt relief from pain and vomiting and rapid general improvement follow treatment, especially the use of the arsphenamines. The Wasserman should diminish in intensity as most case are not Wasserman fast.

Given then a known syphilitic between thirty and fifty, with a progressive digestive syndrome having pain and vomiting as outstanding symptoms, and showing anacidity, a positive blood Wasserman and x-ray signs compatible with the condition, we are safe in assuming the diagnosis provided there is a reasonably prompt response to the administration of arsphenamine.

At times the question of surgical intervention is very acute and in these instances, if the x-ray evidence points to an operable lesion which may be carcinomatous, exploratory operation is to be advised because there is less danger to the patient in early operation than in delay for the therapeutic test.

Prognosis:—The outlook, especially in uncomplicated cases, is usually good, and a prompt therapeutic response is to be expected. Singer and Flexner have suggested that there is a tendency, at least in many cases, to a regression and a spontaneous recovery. The symptoms and the anemia clear up very promptly and there is a rapid gain in weight, but the pathological picture as shown by x-ray is much slower and is often in fact permanent. In most instances there is no return of hydrochloric acid. Of Eusterman's cases, 36.8% were clinically cured; and 42.5% more were much improved; a total 79.3% showing either complete or almost complete relief. 10% showed no improvement. Only 4.3% had a return of secretion of hydrochloric acid and all these showed complete clinical cure. Retention cases may show an accentuation of symptoms under treatment due to contraction of the lesion and still further narrowing of the gastric outlet. Such cases usually clear up promptly after suitable surgical intervention. Hemorrhage is rare owing to the fact that the pathology obliterates so many of the blood vessels. It does occur, however, but probably in those cases only in which there is a hepatic involvement as well. Marginal ulcer after gastroenterostomy is exceedingly rare; in fact one author states it is not seen. I was able to find one case reported, however, that of Bradfield and Vasudevan. Perforation, also very unusual, has been reported in three cases.

Treatment: — The treatment of gastric syphilis is basically antiluetic. No preparatory treatment for arsenicals is necessary as the Herxheimer reaction is said not to occur in gastrolues, or at least to be very rare. It is better to begin on small doses of arsphenamine and due regard should be had for proper dietetic adjustment for the individual patient. Hydrochloric acid should be given when there is subacidity, and cases showing complicating abdominal pathology of a surgical nature, such as chronic appendicitis, gall-stones, and the like, will require operation before there is complete relief from digestive disturbances. Retention cases may require surgery, either resection or gastroenterostomy, depending upon the findings in the particular case and the judgment, skill and experience of the operator. When in doubt as to whether the lesion is cancer or lues, and assuming a diagnosis of cancer in an operable stage, resection should always be the procedure of choice. In any instance prolonged antisyphilitic treatment is necessary.

Summary:—1. Gastric syphilis is a definite clinical entity, and though rare is commoner than was formerly believed.

2. The pathology is primarily submucosal infiltration with secondary atrophy of the mucosa, ulceration, atypical gummatous for-

mation, thickening of the gastric wall, contraction and scarring. The ulcers are large and irregular in outline, usually multiple, and the most frequent site is the lesser curvature.

3. The symptoms do not conform to any of the classical digestive syndromes, but usually show an atypical grouping with pain and vomiting in the foreground of the clinical picture, and all symptoms tend to become progressively worse. Palpable tumor is rare.

4. The blood Wassermann is almost constantly positive but the fluid Wasserman rarely so.

5. The test meal shows small volume and anacidity except in retention cases. Blood, lactic acid and excessive mucus are practically always absent, and the gastric juice may show a positive Wassermann reaction. The anacidity is usually permanent regardless of symptomatic cure.

6. The roentgen ray shows the lesion usually prepyloric or in the midstomach, with dilatation of the esophagus when there is definite contraction of the stomach or pylorus, miscrogastria, symmetrical involvement, at times dumb-bell deformity, at others narrowing or funnel stomach, rapid emptying, lack of persistalsis in the affected area, stiffening of the stomach wall, and a gaping pylorus.

7. The diagnosis should be based on clinical criteria rather than upon the microscopic picture. This should include the complete clinical picture rather than any one or two features. To be considered are: (a) History, especially of progressive severe stomach disturbance; (b) Age usually earlier than average for ulcer or cancer; (c) Concomitant stigmata of syphilis; (d) Anacidity; (e) Positive Wasserman in blood and gastric juice but rarely in the spinal fluid; (f) x-ray findings of the actual gastric involvement; and (g) A reasonably prompt therapeutic response.

8. The prognosis is usually good but in retention cases treatment may aggravate the picture. Hemorrhage is rare and perforation exceedingly so.

9. Treatment is primarily specific. Suitable diet and hydrochloric acid should be given. The Herxheimer phenomenon is so rare that it may be disregarded and arspehanamine used as soon as the diagnosis is established. Prolonged antiluetic treatment is required. In retention cases surgery, either resection or gastroenterostomy, may be necessary. If cancer has not been excluded and the lesion is operable, resection should be done.

MATERNITY DEATH RATE

"The advance of modern obstetric knowledge along three principal lines, together with the gradual improvement in feminine physique, is the reply to the medical profession to the challenge that the United States has too high a maternal mortality rate and the general question as to what is being done to reduce it."

This opinion of the late Dr. John Whitridge Williams, who was obstetrician-in-chief of Johns Hopkins Hospital for more than a quarter century, is advanced by Aldine R. Bird in an article in the May *Hygeia*, entitled "Progress of Obstetric Knowledge in America.

The part the medical profession has taken in the general effort to reduce mortality among mothers has been the progress of obstetric knowledge and, as summed up by Dr. Williams, has been along these general lines: (1) the development of asepsis, with consequent reduction in mortality from puerperal fever; (2) the extension of prenatal care, and (3) improvement in operative technic, made possible by anesthesia and asepsis.

Prenatal care has contributed much to the progress already made in reducing the mortality rate. At the present time the doctor knows before the birth of a child whether that birth will be normal. If the child will be too large for normal delivery, a cesarean operation can be performed with a minimum of risk. The development of asepsis is perhaps the most significant advancement in modern obstetric knowledge, for it reduces or eliminates the danger from septic or blood poisoning.

BILATERAL DOUBLE KIDNEY WITH DUPLICATION OF URETERS*

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CLINICAL research and investigation in recent years far surpasses any like period in any other century. With the new clinical methods we see the modern concepts of disease processes. In this march of progress each department of medicine and surgery has made its way a little nearer the goal line, and in this march of progress Genito-Urinary Surgery, or Urology, has at least kept pace. Previous to the last few years of the last century that part of man's anatomy below his waist line was known as his private possessions. Now with our lighted diagnostic instruments it is known as the "Great White Way". In the past few years the introduction of pyelography has again advanced and refined our diagnosis and treatment.

The anatomically perfect and the structurally correct are found only in the story book and the pride of mothers' love. Anomalies of the various parts of the body are not infrequent, but with the exception of the spine, the genito-urinary tract is most often the seat of anatomic variation. One of the rather frequent anomalies of the genito-urinary tract is that of double kidney with duplication of renal pelves and of the ureters. While two of the rare conditions found are unilateral fused kidney of which there are seven on record and second a true supernumerary kidney of which there are 30 on record. Young and Davis[1] state that the condition of double kidney and ureter is not so rare, but that the recognition of the condition is extremely rare. They believe that anomalies of the kidney and ureter are much more frequent than is generally appreciated and that among such kidneys a relatively large number show actual disease. Since it is known that such anomalies are particularly susceptible to disease it would seem logical that a fair percentage present themselves for examination.

In going over the literature I find no clearer classification than that collected and presented in 1932 by Lintz[2] from whom I quote freely in this presentation.

In the condition known as complete duplication of the ureters there are separate bladder orifices for each ureter with the ureters running from the pelves to the bladder. In the incomplete form of duplication there is union of the duplicated ureters somewhere between the emergence from the pelves and the entrance into the bladder. The pelves seldom ever communicate with each other. There is always a certain amount of renal parenchyma between the pelves. The size of pelvis has a direct relationship to both the superior and the inferior calices and the lower is nearly always the larger. When the two renal pelves have separate paths of drainage the duplication may be said to be anatomically complete.

It is quite frequently found that the two ureters starting off from the two pelves may join at the upper, middle or lower thirds like a Y. These points of joining are frequently the points of crossing of the ureters which is usually near the brim of the pelvis. Several cases are found where the ureters are lying parallel and enclosed in a common sheath. In the literature we find reported one case of five ureters and one case of six.

A long narrow kidney is suggestive of a double kidney. With no calices projecting below the line of the ureteropelvic junction a double kidney is always a possibility. It is found rather more frequently in the female. Mauclaire and Sejournet[3] found the ratio of

*Read before the Pittsburgh Urological Society, February, 1933.

occurrence in females to males to be 7 to 3. Wagner, Poirier, and Bostroem[4] in large autopsy series found the frequency of complete and incomplete duplication of the ureters to be from three to four per cent. Broadly speaking we can say they are found in about 5%. Braasch and Scholl[5] cited 144 cases of duplication of renal pelves and ureters of which thirty per cent were complete and seventy per cent incomplete. These authors also noted that 37.5 per cent of the cases presented some pathology of the urinary tract. Harpster, Brown and Delcher[6] in a review of the cases of duplication of the ureter in the literature up to 1922 found complete duplication in 58.1 per cent of the 382 cases reported up to that time. They believe that only a very few cases of this condition are diagnosed pre-operatively, the difficulty being increased when the cystoscopic examination shows but two apparently normal ureteral openings in their usual positions.

Papin and Eisendrath[7] pointed out that the ureter belonging to the upper pelvis always ends lower and more mediad. In addition, they state that when there are two ureters from one kidney there are always two pelves on that side—no case has ever been shown to be otherwise. I found this to be true in the two of my cases pyelographed. Bugbee and Losee[8] held that the presence of a double ureter means the existence not only of two pelves but also of two physiologically separate kidneys on the side involved, although these may be fused anatomically to represent a single organ. Braasch and Scholl[5] were of the opinion that hydronephrosis is the most common pathological complication of duplication of the ureters. They believed that this is most probably due to the fact that there is ureteral obstruction in the region of the junction of the two ureters in incomplete duplication.

Thompson found that the combined capacity of the pelves in double kidney may be less than that of a single normal pelvis. In such cases the gradual constriction of the normal pelvis may be replaced by a very sharp one, making the discharge of urine more difficult. He believes that at times pain and slight pyuria can be explained only on the basis of double small pelves with reduplication of ureters. From the number of cases of this form of anomaly of the urinary tract that are cited one might conclude that this condition should be encountered not infrequently in practice. That the diagnosis is seldom made is well known.

My purpose in presenting these three cases of double kidneys and ureters is to point out that with the aid of newer laboratory methods this condition should be diagnosed more frequently.

In cases of abdominal or pelvic pain or other symptoms in either sex not definitely diagnosed should be submitted to a complete urological examination before any operative procedure or discharged as no pathology found. In each of the three cases presented I have prevented needless abdominal operations.

CASE REPORTS

Case 1. Referred by Dr. P., June, 1927, P. T. Z. Male, age 51 years, married; occupation, paper hanger. No serious illness, no operations. For the past three years the patient has had some discomfort in the right side of the abdomen. With pain, nausea, vomiting, and attacks of colic in the right ingunal and lumbar region. The pain was referred to the region of the bladder, penis and the right testicle and down the inner side of the right thigh. There has been frequency and nocturia. No hemituria. Occasionally a small number of red blood cells and leucocytes were found in the urine. Patient was referred to me with the information that an operation for appendicitis was being considered and I was asked to rule out any urological condition. Patient was examined at my office and immediately on filling the bladder with water I made the routine examination of the bladder and trigone with the cystoscope. The ureteral opening on the left side was normal in size, shape and appearance. On the right side of the bladder where the ureteral opening is usually found, I noted a ureteral opening normal in size, shape and appearance. About one cm. to the right of this opening and about one cm. below there appeared to be another ureteral opening normal in size, shape and appearance. A number 7 catheter was passed up both these openings with-

out obstructions. Urine flowed from both of them which was clear macroscopically. Under the microscope centrifuged urine showed a few blood cells. Function and pyelograms were not done. I immediately reported my findings to the surgeon referring the case and we decided that no appendectomy should be done. This was five years ago and I have had occasions to interview this patient at various times and he says that he has such symptoms as reported above at frequent intervals. March 14, 1933, I again interviewed him and his symptoms are still present. Had not a urological examination been made this patient would have had an useless appendectomy five years ago.

Case 2. Record Number 11, 718, admitted October 22, 1932, referred by Dr. P., age 15 years, occupation school boy, chief complaint, painless hematuria. This patient had a previous admission in February, 1932, and after observation in

Case No. 2. Pyelogram and ureterogram from upper opening to lower pole.

bed for a few days his painless hematuria cleared up and the patient left the hospital without submitting to a working up of the case. Family history, father and mother living and well; no known hereditary diseases in the family. Past history negative except frequent attacks of tonsillitis. Patient on general inspection appearance indicates that his age given at 15 years is apparently correct, color of skin fair, mucous membrane, fair, tongue not coated, heart and lungs negative. Patient gives a history of mild attacks of painless hematuria since his former admission eight months ago. In addition to his hematuria he has marked polyuria.

Case No. 2. Pyelograms and ureterogram from injection 13½% Sodium Iodide in lower opening to upper pelvis.

On October 12, 1932, patient was cystoscoped, urine cloudy, bladder capacity 300 cc. There were no foreign bodies or tumor masses, bladder mucosa was negative, the ureteral orifice on the right side was normal in shape, location and appearance. On the left side I noticed a ureteral opening which was normal in size, shape and appearance and as I was about to insert a catheter I noticed another depression about one cm. lower and about one cm. to the mesial line thereof. On close observation these appeared to be two ureteral openings. I was able to pass a number 6 catheter through each ureteral opening to the kidney without meeting any obstruction. Urine flowed from each opening. An x-ray catheter was left in the right upper opening. A pyelogram was taken, the pelves and the calices were well filled and there was no duplication of the

pelves. The kidney appeared to be a little longer than the normal kidney.

October 14, 1932 I again cystoscoped the patient and injected one cc. of indigo-carmine intravenously which appeared in four minutes in the right upper opening and five in the lower. Using 13½% of sodium iodide I injected the lower opening. The

Case No. 2. Each catheter injected 13½% Sodium Iodide showing pyelograms and ureterograms.

pyelogram showed a shadow in the upper pole in the kidney shaped like a small elongated keystone or like a horse shoe nail. This I describe as a second pelvis in the upper pole in a fused or a double kidney.

October 21, I again cystoscoped the patient and passed a number 6 x-ray catheter up each ureteral opening to the kidney. Urine began to flow from each catheter. Each was injected with a 13½% solution of sodium iodide which showed pyelograms such as I had gotten from a single injections previously; also two ureterograms. It is my intention to do an intravenous urography in the future.

As this patient has had frequent tonsillitis I advised and had a tonsilectomy done. Three months have passed and the patient has reported twice weekly and to date has had no recurrence.

Case 3. Record Number 13,073, referred by Dr. S. Patient R. S., age 22, married, occupation house wife. The patient had been in the hospital for two weeks with chief complaint as tenderness over the right kidney anteriorly and posteriorly. Family history negative and no history of hereditary disease.

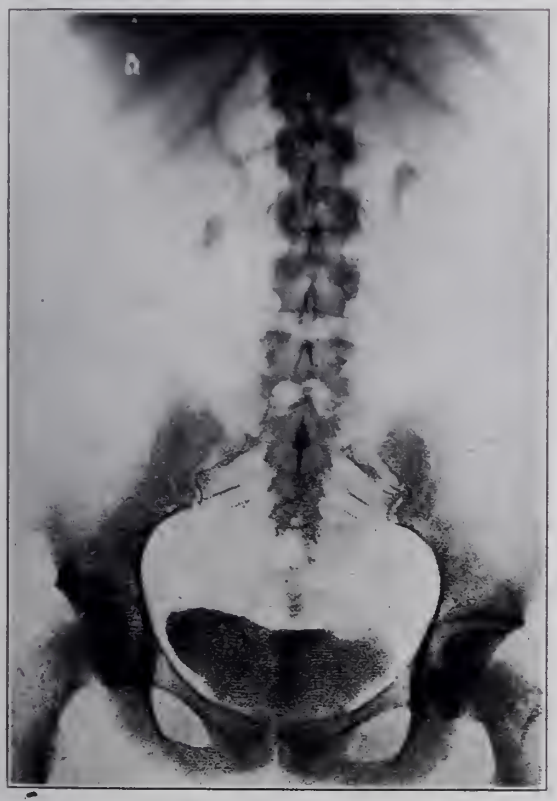
Patient is a dark brunette, weighing about 110 pounds and giving the impression of a long continued illness. Temperature runs from 102 to 104 and pulse around 120, her tongue is clear and she doesn't appear to be extremely toxic. The urine is cloudy and loaded with colon bacillus.

On January 16, 1933, the patient was cystoscoped, bladder urine cloudy, bladder capacity 400 cc., no foreign bodies or tumor masses. The blood vessels were little injected, the trigone mucles were more elevated than normal, at the upper end of each and lateraly there was a depression fold or slit on either side which impressed me as the ureteral

Case No. 3. Sodium Iodide 13½% showing upper pole right kidney and ureterogram.

openings. However, not being able to see the opening of a ureter in this slit or to engage a catheter, I took a glance at the upper end of each trigone and there found a ureteral opening on either side slightly smaller than normal. I felt positively that I was dealing with abnormalities and that what I had seen was double ureters on either side. I catheterized

each ureter successfully. The right was clear but showed colon bacillus, left negative, the function of the right kidney appeared in seven minutes and was 5% in 20 minutes, a number 7 x-ray catheter was passed to the left kidney and exposure was made. The right kidney appeared to be the width of an ordinary kidney but was between one-third and one-half longer. The left kidney appeared to be same size and shape as the right one. A pyelogram was done which showed a well defined calire in the upper pole of the right kidney. There is a well defined pelvis and curved to the ureter though somewhat smaller than usual. It was very noticeable that the lower pole of the right kidney showed no sodium iodide. I was impressed that I had a double kidney on the right side and probably on the left. As previously stated this patient was extremely ill



Case No. 3. Taken 4½ minutes after injecting Neo-ipex showing two definate pelves and calicies on both the right and left which do not communicate.

and I was impressed that all of her pathology was not in the urinary tract.

After a few days observation on January 25, 1933, patient was given 20 cc. of neo-iopex interavenously, 4½ minutes after the beginning of the injection exposure was made which showed two definite pelves and calices on either side which did not communicate, 6½ minutes after beginning of injection left kidney and ureters were visible, ureters on the right could be faintly seen, 10½ minutes after injection cystogram was beginning to form and there was absolutely no doubt but what there were two pelves and two sets of calices which did not communicate on either side and two ureters on either

Case No. 3. Taken 16½ minutes after injection Neo-ipex showing double right and left pyelograms and partial double ureterograms.

side which apparently are complete to the bladder sixteen and a half minutes after injection the fourth exposure was made which verified the other exposures. It was my intention to again inject the patient with neo-iopex and take another series of pictures but on reviewing the literature I found many others radiograms published in journals with no better definition than these already taken.

As stated above we were impressed that the urinary tract was not at this time causing all of her illness. On February 2, 1933 patient developed a mass in mid right abdomen and the surgeon in charge of the case and I advised an immediate exploratory operation. This was done under spinal anesthesia. There was found a mass between the ascending colon and the belly wall at about the middle colon, below the liver an anterior to the

kidney and some distance from either, by blunt dissection this was opened and drained. There were no other pathology found in the abdominal cavity. The appendix was removed, and the patient made a slow but gradual convalescence.

This patient was advised to keep herself under observation and it is my opinion that she is subject to more pathology in the urinary tract.

Treatment:—In my own three cases presented here, case number one has had no treatment. I feel his symptoms are gradually becoming worse and his treatment has been outlined to him.

Case Number Two—Has had dilatation and lavage with improvement. Also tonsillectomy with improvement.

Case Number Three—Whom I described as accutely ill when the diagnosis was made, has had no treatment. Her treatment will be taken up following her convalescence.

In general the treatment is dilatation and lavage with removing of any obstruction found. Many of the patients whose infection is not too far advanced recover at least temporarily with ureteral dilatation and lavage. These individuals are patients that will stay patients as they have real pathology. The radical treatment of course is nephrectomy or heminephrectomy. In cases with pyonephrosis, calculus, neoplasm or tuberculosis, the treatment is obvious and simple. It is understood that no one recommendation will suit all cases as the individual anatomy of each abnormal kidney will govern the operation for that particular case.

Comment:—In earlier years most of our knowledge of double kidneys and ureters was gotten from the autopsy table. In the review of the literature I have been influenced to reflect and consider some of my own cases in which I was apparently unable to find any definite cause for the symptoms. I can now feel that some of these unaccounted for symptoms may have been a congenital deformity of the kidneys or ureters.

The frequency of the occurrence of double kidney with duplication of the ureter and the very infrequent diagnosis made of this condition suggests that there is generally a nearly complete absence of symptoms that might be termed characteristic.

Where a history and physical examination are suggestive of an indefinite disturbance of the urinary tract the physician should consider the possibility of double ureter. With the introduction of intravenous pyelography the diagnosis becomes quite easy and very certain.

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CHILD AND DOCTOR

"The relationship between the child and the doctor ought to be a pleasant experience for both, and with properly directed cooperation on the part of parents, this highly desirable consummation is easy to achieve," maintains Dr. H. G. Bull, who writes about "The Child and the Doctor" in the May *Hygeia*. It is generally conceded that the most desirable contact can be made in the beginning when the child is not feeling sick. Once the relationship is established, there is little difficulty to be expected from performing the prophylactic measures that call for a little more courage on the part of the child.

CHRONIC VESICULO-PROSTATITIS*

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THE object of this paper is to present a subject of interest, not only to those of us who are doing urology but to the internist and the general practitioner as well, and the only reason we do not contend that it is the most common disease is because women do not have prostates.

In this paper the condition due to the various pyogenic infections will be considered including those cases in which an infection persists after a gonorrhea is cured. I shall also consider infections of the vesicles and prostate as one disease, since any condition involving the one almost invariably involves the other.

The former prevalent belief that all cases of chronic vesiculo-prostatitis were due to a venereal disease has been recently disproven by the work of Von Lackum[4] of the Mayo clinic. In a series of cases he found that 57% gave a history of a previous gonorrheal infection and that 43% gave no history of a venereal disease.

Causes:—The causes of vesiculo-prostatitis may be divided into:

1. General;
2. Local to the Genito-Urinary tract;
3. Occupational;
4. Sexual.

1. General—From general diseases the prostate may become infected following influenza, pneumonia, typhoid, septicemia and various other diseases, or may become infected from a focus of infection in the teeth, tonsils, sinuses, colon or other foci of infection.

2. Local to the Genito-Urinary tract.

(a) From infections of the kidney and bladder. An infected urine passing over the prostatic and vesicle ducts often leads to an infection of these organs from the same organism that causes the infection higher in the urinary tract.

(b) Local diseases of the urethra. Usually following a gonorrhea as it prepares the field for invasion of other organisms which persist long after the gonococci have gone, or from the so-called non-specific urethritis which may be chemical irritation following the use of too strong a prophylactic, or from alcohol following a drinking bout of the famous West Virginia "moonshine" or home brew, or a simple urethritis caused by any of the various pus producing organisms.

3. Occupational.

When we consider the tendency of the present generation to use the automobile for practically all business and pleasure trips is there any wonder why we find a combination of conditions we have called for want of a better name "The Traveling Man's Disease" which is a chronic vesiculo-prostatitis. We believe the continual riding in an automobile, the vibration of the car, a full bladder and irregular sexual habits lead to a congestion of the posterior urethra and prostate. This congestion sooner or later leads to an infection.

4. Sexual.

The sexual apparatus has been so constructed by nature to be used in a normal and regular manner. Any deviation from normal intercourse is likely to cause trouble. The present economic disturbance has increased the tendency of our generation to practice some form of birth control. Since there is no general knowledge of the proper contraceptives to use, they practice what they consider the most simple, yet the most harmful, i.e., "*coitus interruptus*". In this there is an incomplete relaxation or emptying of the prostate and vesicles. This practice repeated over weeks and months leads to a chronic con-

*Read before the Kanawha Medical Society at Charleston on November 10, 1932.

gestion, which in turn leads to an infection and impotence.

The bacteriology has been well established by the recent work of Nickel[1] of the Mayo Clinic. He found the most common organism to be the streptococcus, followed in frequency by the staphlococcus, colon group, micrococcus and various other organisms. He was also able to isolate the same organism from a distant lesion as found in the prostate and to produce the same localization when inoculated into animals, and this was particularly true of a green producing streptococcus. He also found that 59% of the organisms isolated from the prostatic and vesicular secretions were anaerobic. We have made a routine the past few years of culturing our patients to determine the presence of a gonorrheal infection, or to determine if a case is cured which still has a prostatic infection. We have found the staphlococcus most often, followed by the colon group, streptococcus, a gram positive diplococcus, influenza, diphtheroids and many others. We have made no attempt to isolate the different strains or to grow them anaerobically but it is interesting as a comparison. In passing I may add that a few cases have been reported of trichamonas found in the prostatic secretion.

Pathology:—From the recent work of McCarthy and his staff on the pathology of the seminal vesicles we find there is a definite relation between the pathology of seminal vesiculitis and conditions of the bladder neck, posterior urethra, verumontanum, and prostate.

Grossly the degree of inflammatory change could not well be determined. Microscopically the most common type is an inflammatory involvement of the lumen, mucosa and submucosa with very little or no involvement of the muscularis except possibly an hypertrophy and only in those cases where there is marked adnexal inflammation is there muscularis and perivesicular involvement.

Whatever the type the ejaculatory ducts bear the brunt of the attack, there being involvement of all the layers with narrowing of the lumen, poor drainage and occasional permanent occlusion.

Chronic infections of the prostate may follow acute catarrhal, acute follicular, acute parenchymatous inflammations, or the infection may be insidious from the onset. Grossly the prostate shows changes in consistency; it may be soft and boggy or of a definite hardness. The cut surface often has a red tint. Turbid fluid may exude from the surface and small abscesses may be present. Microscopically, the tubules may show both periglandular infiltration and proliferation of the epithelial cells. In some the lumen of the tubules is filled with desquamated epithelial cells and polymorphonuclear leukocytes. Periglandular round cell infiltration is present chiefly in the connective tissue between the gland tubules and consists of mononuclear round cells and epitheloid cells, although at other times dense collections of polynuclear round cells may be present. Between areas showing inflammatory change there are areas of normal prostatic tissue, and in some areas both periglandular and endoglandular changes occur, while at other times the entire stroma shows infiltration with polymorphonuclear leukocytes.

The symptoms are—

1. General;
2. Genito-Urinary; and
3. Sexual.

1. General—Almost any part of the body, as in other foci may become involved from an infected prostate or vesicles. The probable mechanism is: the infection may be carried through the blood stream, the focal toxins may be responsible, or the distant symptoms may be reflex. Among the most interesting general conditions, proven by Von Lackum[4], which may be of prostatic origin are: arthritis, spondylitis, calcaneal spurs, neuritis, myalgic and neuromuscular pains, ocular infections including iridocyclitis and neuroretinitis, secondary anemia, vascular skin diseases as uticaria and angieoneurotic edema, so called undeterminate pyrexia, lower abdominal pains, functional gastric complaints and backache. The most common of this

group is low backache, the morning backache, more noticeable on arising which gradually wears off after exercise or moving around. Also it is more noticeable after sitting for a length of time or after car riding.

2. Genito-Urinary.—There may be no symptoms referable to the genito-urinary tract. Usually there are occasional attacks of frequency of urination, the patient having to get up once or twice during the night. There may be some burning and a feeling of wanting to void after the bladder is emptied. The urine is quite often normal, but more often there are three to four pus cells per field and rarely is there a frank pyuria. Often there is the so called "morning drop". A better description of this is "a pearl" which is seen at the meatus of a morning before urination, after which it disappears and is not seen again until the next morning. In those cases in which there is an atrophic condition of the prostate and vesicles a discharge may appear with a hard stool, the so called cases of "prostatorrhea" and "spermatorrhea". Again the only symptom may be a feeling of fullness, stiffness or congestion in the pelvis region. Another type of case we must keep in mind are those who have no complaints until a complication results as an epididymitis following heavy lifting or straining.

3. Sexual—The sexual symptoms are those of impotence. Since it is a subject within itself I shall enumerate only the chief symptoms, which are: premature ejaculation, no erection, ejaculation without erection and the various nervous and mental symptoms so well known to all of us. These are the so called cases of sexual neurasthenia.

Diagnosis:—The diagnosis can be made only on the microscopic examination of the prostatic and vesicular secretions. While it is true that there may be an abnormality in the consistency of the prostate to the examining finger i.e., it may be soft and boggy or hard and nodular and the vesicles may be palpable and seem thickened yet the microscopic examination of the expressed secretion may be perfectly normal. Again the prostate and vesicles may seem normal and yet an examination of the secretion show many pus cells and pus clumps. Still we must remember that it is often the small insignificant, apparently atrophied prostate that is the worst offender.

Often in those cases where there is a deep-seated, low-grade infection it is impossible to make a diagnosis on the first examination and an examination should be repeated three to four times if necessary before an infection can be definitely ruled out.

Urethroscopic examination is a valuable aid in establishing a diagnosis. Various degrees of inflammation of the urethra may be found from the subacute stage to the chronic sclerotic with definite contraction. The prostatic ducts show redness and swelling or in the later stages a definite retraction and dilatation. The verumontanum is enlarged, red and edematous. The ejaculatory duct openings are inflamed and may be completely covered with the enlarged verumontanum, or may be pushed to the sides. At times there is a subtrigonal bulging with thickening and hypertrophy of the trigonal muscle, which in turn would lead to median bar formation.

We are often asked the question, is an infected prostate or vesicle responsible for a distant lesion? There is no way to tell except by a course of treatment which should be followed by improvement, unless we are able to carry out a definite procedure as is followed by Nickel[1].

In a few cases the differential diagnosis may be difficult between the hard nodular infected prostate and early carcinoma or tuberculosis, but the characteristic hardness and infiltration of carcinoma and the fact that tuberculosis is primary elsewhere should not make the diagnosis difficult.

Treatment:—The principles of all treatment are three: to eliminate the cause, to increase the circulation and to establish drainage.

It is needless to say that all other foci of infection should be eliminated. Our cases of gonorrhea must be treated until they are cured as the after effects are often worse than the disease. Our traveling men should be instructed to break up their trips, to keep an

empty bladder when riding and not try to crowd two or three weeks' intercourse into one week end. To our patients who will practice some form of birth control, instruction should be given as to the proper contraceptives to use. A reasonable amount of exercise is very beneficial to these patients and I know of no better form than golf.

The usual case responds very nicely to prostatic and vesicular massage, with the instillation of some mild antiseptic into the posterior urethra as mecurochrome or mild solution of silver nitrate. A course should consist of massage and instillation at from three to seven day intervals for a period of from six to eight weeks. We have found the five day interval and the instillation of 1-2% silver nitrate the most satisfactory. After six to eight weeks' treatment a period of rest should be given of from four to six weeks, to be followed by periods of treatment and rest until the infection has cleared up.

It is the unusual case in which the problem becomes more difficult. Everything has been advised from the radical surgical removal of the prostate and vesicles as advocated by Cunningham[5], to the well tried and found wanting diathermy. In many cases all that is needed besides massage and instillation is a thorough dilatation with a Kollman dilator. In other cases heat by rectal irrigation or by means of a Bransford Lewis heater produces the desired results. Other cases respond nicely to the painting of the posterior urethra and verumontanum with 10% silver nitrate through the urethroscope.

Again we must not lose sight of the fact that the vesicles are more often the offending organ, that they are difficult to reach in massage and that drainage is harder to establish. Several routes of approach have been advised to help clear up these infections. Stellwagen[6] has advised injecting the vesicles through the rectum, but this has not proved very popular. The most popular procedure has been that of vas puncture as advocated by Belfield[7]; in this, some antiseptic solution as argyrol is injected into the vesicles through the vas. Both of these procedures have failed to take care of the chief underlying factor, that of establishing drainage through the ejaculatory ducts. Recently, thanks to the ingenuity of McCarthy[8] of New York we have an instrument through which the vesicles can be investigated in a thorough manner. We are not only able to catheterize and dilate the ejaculatory ducts, but are able to inject antiseptics into the vesicles, obtain specimens uncontaminated by prostatic secretion and to make vesiculograms. This work has been of immense value to us in helping to clear up the difficult cases.

Conclusions:—In conclusion in order to have a better understanding of the problems of this condition we must remember that:

1. Chronic vesicluo-prostatitis is an extremely common disease which seems to be on the increase.
2. Approximately half the cases are of non-venereal origin.
3. There may be no symptoms referable to the genito-urinary tract.
4. The diagnosis can be made only by the microscopic examination of the prostatic and vesicular secretions.
5. The principles of all treatment are to eliminate the cause, to increase the circulation and to establish drainage.

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THE USE OF SPINAL ANESTHESIA IN PATIENTS SUFFERING WITH TRAUMATIC CONDITIONS OF THE PELVIS OR LOWER EXTREMITIES*

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CORNING[1] accidentally produced the first spinal anesthesia in 1885 by cocaine while doing a para-vertebral injection. He did not know that the drug had to be injected intradurally but thought that it was absorbed by the blood and carried to the cord. Quincke[2] introduced the spinal puncture in 1889 and Bier[3] purposely produced the first spinal anesthesia in 1889. The toxicity of cocaine caused spinal anesthesia to fall into disrepute, only to become popular again after the introduction of less toxic drugs that would produce nerve block. At present even with novacaine, nupercaine, and pantacaine at our command, the limitations of spinal anesthesia are recognized in this country and many anesthetists confine its use entirely to surgical lesions situated below the level of the umbilicus. Davis, Havens, Givens, and Emmett[5] have shown that the anesthetic used for producing spinal block does cause varying degrees of inflammation, apparently transient, of the leptomeninges, of the gray matter, and fiber tracts of the cord. It seems to me that this inflammation probably accounts for some of the headaches following a spinal anesthesia which closely resemble the headache that follows an encephalogram which we know is due to the inflammation of the leptomeninges caused by air injected. Tovell[6] has given an excellent discussion of spinal anesthesia with special reference to its indications and contraindications.

We have been using spinal anesthesia almost routinely for all surgical conditions that exist below the umbilicus. However, we have found the greatest satisfaction in the use of spinal anesthesia on those patients who have traumatic conditions of the lower extremities or of the pelvis. Due to the location of our hospital we deal with many traumatic conditions which have been received by workers in the coal mines. These men have frequently traveled a distance of twelve to thirty miles during which time they have suffered much pain and have developed a certain amount of shock. Upon admission they are dirty with coal dust and must be given a bath before placing them in beds. Also, it is desirable to get x-ray pictures of the traumatic area. If the patient has a fracture of one of the bones of the lower extremities or of the pelvis, this handling causes much pain and tends to accentuate shock. If the patient is given a general anesthetic, the struggling which accompanies the induction of anesthesia is frequently very undesirable because of the danger of fragments of bones injuring an adjacent nerve, an adjacent blood vessel, or, in case of fracture of the pelvis, a hollow viscus might be perforated. Furthermore, the danger of giving one a bath while he is under general anesthesia with the vasomotor system in a dilated condition is well known. Consequently we have adopted the following procedure:

When a patient is admitted with evident fracture of one of the bones of the lower extremity or a probable fracture of the pelvis, his blood pressure is taken immediately, then he is turned on the side. An area is cleansed over the lower lumbar and upper sacral regions with ether, alcohol, and iodine, and draping is applied which consists of a sterile sheet about twice as large as an ordinary towel with a hole in the center about four inches in

*Read before the McDowell County Medical Society, May 4, 1932.

diameter. This sterile sheet is placed so that the fourth and fifth lumbar vertebrae are exposed through the opening. With a number twenty-two gauge needle a spinal puncture is quickly made between the fourth and fifth lumbar vertebrae or between the fifth lumbar and the first sacral vertebrae. The spinal fluid is allowed to drop into a vial containing the quantity of novacaine crystals desired, which is usually about 80 mgm. The concentration of the solution should be about 5 per cent so that about 1.6 c.c. of spinal fluid should be used with the above amount. It is not necessary to use the usual dose of ephedrine as it will often cause more bleeding by elevating the blood pressure. However, in most cases it makes no difference whether it is used or not. After injection of the solution, the patient is almost immediately relieved of the pain, and the bath and roentgenologic studies can be carried out without anxiety. During these procedures, however, the head should always be kept on a level with or below the level of the rest of the body. Because of the muscular relaxation effected by spinal anesthesia which can be obtained by general anesthesia only in the third stage, reduction of the fragments is facilitated and a cast can be easily applied.

In order to facilitate the procedure, novacaine may be used in 5 per cent dilution, using normal saline as the solvent. Tovell[6] stated that if the patient has lost much blood, spinal anesthesia is probably contra-indicated. Also, he considers very high or very low blood pressure as a contra-indication because of the effect on the blood pressure caused by a loss of the vaso-constrictor control, the elimination of the sympathetic control of the heart thus avoiding the normal physiological response of an increased heart rate and thus leaving the vagus, the inhibitor, unbalanced; and partial or complete paralyses of the abdominal and thoracic muscles thus losing the influence of these muscles on the circulation. We have found that in this particular type of work neither condition furnishes a contra-indication. The quantity used is so small that the increased toxicity caused by blood loss can be cared for by the body. Also the concentration is such that if the head is kept lower than the rest of the body, the anesthesia rarely extends to the umbilicus so that the blood pressure is not greatly affected. Because of the fact that spinal anesthesia paralyzes the lumbar sympathetic nerve trunks, Scott and Morton[4] have used it to determine the feasibility of sympathectomies for Buerger's disease, Raynaud's disease, and Hirschpruung's disease. In this work the above authors showed that the sensory pathways were blocked first, the sympathetics next, and the motor last.

Conclusion:—As an anesthetic for all conditions, ether is still the safest. However, for traumatic conditions of the pelvis or lower extremities, we think that spinal anesthesia is almost never contra-indicated and it affords safety and comfort to the patient, and facilitates proper handling.

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TESTIMONIALS WORTHLESS

"Denied the use of testimonials, the racket of the fake healer, who is the gangster of the cure-all world, would be nothing but a whisper." This statement by Dr. Solon R. Barber suggests his subject in part IV of the series, "Quelling the Quacks," which appears monthly in *Hygeia.*

ACUTE APPENDICITIS*

By RAYMOND LUBLIN, M. D.
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THE statistics of acute appendicitis have been compiled by quite a large number of surgeons, and have been presented on numerous occasions. The figures of morbidity and mortality rates of different widely separated hospitals and clinics have been found to agree to within fairly close margins. The opinion has been recently stated that the mortality rate is increasing, and some of the articles in the journals and some of the papers read at meetings of the surgical sections of the A. M. A. have tended to confirm this impression. This study was undertaken in order to get a cross-section of the status of acute appendicitis in one hospital. One hundred consecutive appendectomies were tabulated in their various aspects. The results of this statistical study are very much in line with other studies of the same nature.

The patients came under the care of one of three surgeons whose methods of treatment were similar. A moderate dose of avertin was used almost routinely, supplemented by drop ether, and proved very satisfactory. A low median right rectus incision was used with the rectus muscle retracted laterally.

The mortality in chronic, recurrent, subacute, and acute unruptured appendices was negligible. The mortality becomes 33% in ruptured appendices with abscess, and much higher in those with peritonitis. No better argument for early operative interference can be had than these figures.

Eighty patients with chronic, subacute, acute ruptured, and acute unruptured appendices were operated upon without any mortality. Of eleven patients with abscess, four died. Two patients with general peritonitis died. It is interesting to note that the number of males affected wth appendicitis is more than twice as great as females. Eighty percent of the patients were under thirty, while fifty percent of the deaths occurred in patients over forty.

It was necessary to perform entero-colostomy once for obstruction at the ileo-caecsal junction by abscess. Three patients had enterostomies which were subsequently closed off.

One patient was a young man of 29 who had a chill lasting 30 minutes, following which he had vague abdominal discomfort. About three hours later a doctor found epigastric tenderness which settled in the RLQ. An acute unruptured appendix was removed about ten hours later. The temperature of 101 subsided in the next few days, but on the ninth day, as he was about to be discharged he had a chill, vomited, the temperature rose to 102, and he went on to develop all the signs and symptoms of liver abscess which was proved at postmortem on the 39th day after the initial chill.

There were four chest infections, three bronchopneumonias, and one left lower lobar pneumonia. All recovered. There were sixteen patients with unexplained prolonged temperatures following appendectomy. Any patient with a temperature of 100 or above on the fourth day was put into this group. These were due to concomitant cellulitis of the cecum, streptococcus lymphangitis of the mesentery, stump abscesses draining into the cecum, and absorption and resolution of the appendiceal stump.

There were eight wound infections, any wound showing any sign of pus being classed in this group.

The status of acute appendicitis then resolves itself into the time of operation: early operation—early recovery: late operation—late recovery. The majority of the patients included in this group came from coal mine

*From the Surgical Service of the Charleston General Hospital.

towns and the hills and mountains of West Virginia. Many of them did not see a doctor until they had been ill for a few days, and some not until they were desperately ill. The group presents then a picture totally unlike any group obtained from city practice where access to a physician is easier and resorted to earlier. Still, the results are not any different from other figures.

A great deal depends upon the dominant organism or the mixture of organisms. Even in early cases where the appendix seems alone affected the mesentery is already thickened, and the base of the appendix and that part of the cecum surrounding the base are indurated. Much depends on the rapidity of emigration of the bacteria from the lumen through the walls and into the lymphatics.

This study is presented merely as a cross section of acute appendicitis at a place where many of the patients come rather late to the doctor.

AGE GROUPS

Years	Cases	Deaths	Percentage
1-10	10	1	10
11-20	43	2	4.6
21-30	27	0	0.0
31-40	12	0	0.0
41-50	4	1	25.0
51-60	3	2	66.6
61-70	2	0	0.0

Wound infections	8
Chest infections	4
Unexplained prolonged temperatures	16
Total prolonged temperatures	24

TYPES

Distribution	Cases	Males	Females	Mortality
Chronic and Recurrent	36	15.44%	21.56%	0.00%
Acute unruptured	45	51.67%	14.33%	0.00%
Ruptured and local peritonitis	7	4.58%	3.42%	0.00%
Ruptured and abscess	11	9.82%	2.18%	4.33%
Ruptured and General peritonitis	2	2.100%	0.00%	2.100%
TOTALS	101	61.61%	40.39%	6.6%

The writer wishes to thank Dr. J. Ross Hunter for his kind assistance in this work.

TYPHOID FEVER IN WEST VIRGINIA

By

W. V. WILKERSON, A. B., M. Sc., M. D.
Montgomery, W. Va.

I HAVE chosen typhoid fever as the subject of my paper tonight for the reason that I have admitted to my service at the Coal Valley Hospital in Montgomery an adequate number of cases to indicate that it remains a major problem in the territory we serve.

Typhoid fever is an acute infection with an early septicaemia and is *not primarily a localized intestinal infection.* The B. typhosus has satisfied all the requirements of Koch's law in that it is constantly present, it grows outside the body in a specific manner and the disease has been produced experimentally through the inoculation of chimpanzees and is therefore accepted as the etiological factor. The disease is "characterized anatomically by hyperplasia and ulceration of the intestinal lymph follicles, swelling of the mesenteric glands and spleen, and parenchymatous changes in other organs." *(Osler.)*

Clinically the disease is manifested by an early and somewhat inconstant rose-colored eruption which usually appears over the lower thorax and upper abdomen at some time between the seventh and twelfth day. There is also diarrhea, abdominal tenderness, tympanites and enlargement of the spleen.

The disease has an incubation period of from 3 days to 4 weeks but it is usually about 2 weeks. This is followed by a period of invasion which is variable but which averages perhaps a week although it may be longer. The early prodromal symptoms may be vague

*Read before the Fayette County Medical Society, January, 1933.

but they are most important. The patient complains of lassitude, tires more easily than usual, he has had headaches and has usually been unable to concentrate. The headache and sense of fatigue grow progressively worse. Nausea and vomiting are not uncommon. After a few days he aches all over, very much as in an influenzal infection, the eyeballs are sore, he feels alternately hot and chilly and develops a temperature which seldom exceeds 101 degrees F. during this period of his illness.

In the first week *of the disease proper* the prodromal symptoms become exaggerated. The generalized headache becomes localized in the frontal area. Epistaxis and an unproductive cough develops in a large number of cases. *The patient looks prostrated.* The pulse is large and often dichrotic. The pulse rate has been described as slow. My experience has been that the pulse is equal to or slightly greater than the normal rate but is slow in relation to the temperature.

The temperature curve, where typical, is of value. The afternoon temperature rises steadily until the maximum of 103-105 degrees F. is reached, the temperature each day being 1 to 2 higher than on the preceding day. If too much emphasis is placed upon this feature it will lead us into error but where the typical picture is encountered it is a material aid in early diagnosis.

I am strongly of the opinion that a diagnosis of typhoid can usually be made on purely clinical grounds without laboratory aid. In my own series of cases my records disclose that a diagnosis of typhoid was made on purely clinical grounds at the time of the initial examination in 93% of the cases.

It is true that there are a number of conditions that might at first thought appear confusing but it is believed that an acceptable familiarity with the various conditions requiring differentiation will furnish all the necessary data to avoid frequent error.

Typhoid and para A and B can be differentiated from each other only through bacteriological examination of the feces and urine and the Widal reaction.

Grip and influenza resemble typhoid in that there is headache, pains in the back and legs, sore eyeballs, chilliness, a rise of temperature to 101-103 F., a pulse that is slow in proportion to temperature and an early non-productive cough. These conditions differ from typhoid in that *the onset in typhoid is usually more gradual*, the typhoid patient develops epistaxis as early as the second day and rose spots develop on the lower thorax and upper abdomen.

Malaria resembles typhoid in that there is the same history of lassitude, nausea, vomiting and sometimes diarrhea. In atypical cases the chill may not be present at first. The spleen is palpable in both conditions. There is a normal blood count or a leucopenia in both conditions. A typical malaria differs from typhoid in that the typhoid pulse is dichrotic and the pulse-temperature ratio is low and the typhoid patient develops the characteristic rose-spots. In malaria the pulse is rapid and a normal pulse-temperature ratio is found. There may be herpes but rose-spots never occur.

Pneumonia is sometimes confused with typhoid on purely clinical grounds. The typhoid patient may sometimes develop rather sudden elevation of temperature with chill and increased respiration, cough and sometimes a rusty sputum. The physical pulmonary signs of a pneumonia may be present. Such a pulmonary involvement in typhoid differs from a true pneumonia in that the pulse is soft and dichrotic and slow in relation to temperature, there is epistaxis, the rose spots develop at the proper time and the spleen is enlarged.

Sometimes the diagnosis of appendicitis is made in typhoid and emergency operation performed. Both conditions may develop with abdominal pain which may be generalized at the beginning but later localizing in the right lower quadrant of the abdomen. There is nausea and vomiting, diarrhea or constipation and defensive muscular rigidity. The most valuable early clinical point of difference is the pulse-temperature ratio which, as you know is low in typhoid while in

appendicitis the pulse is small and the rate rapid, being out of proportion to the temperature. The leucocyte count is most important in deciding between these two conditions in the short time that we have at our disposal. In appendicitis there is leucocytosis and an increase in the poly mospho-nuclear neutrophiles, while in typhoid there is leucopenia with an increase in the lymphocytes. Later, of course, the typical typhoid picture makes the differential diagnosis easy.

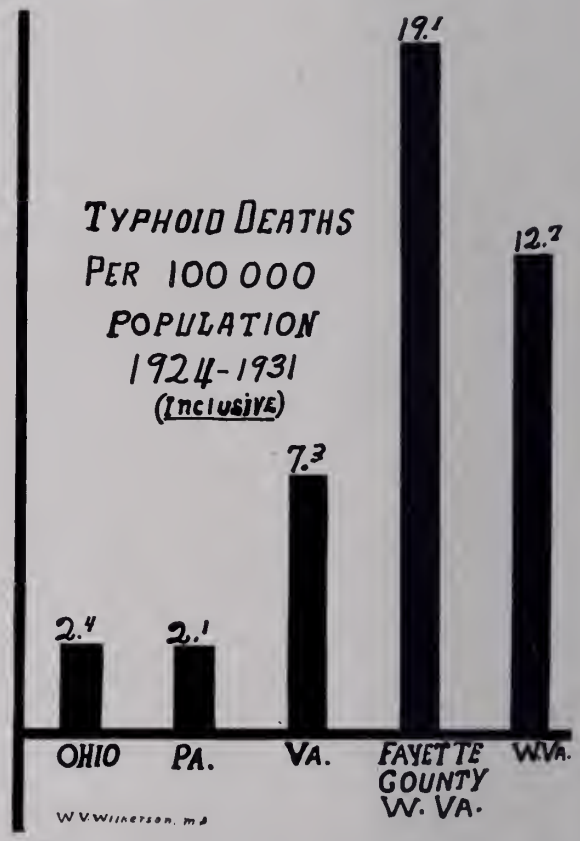
Acute miliary tuberculosis is often mistaken for typhoid. They both have an insidious onset with the same prodromal symptoms of fatigue, weakness and headache followed by a gradually ascending temperature curve with a prolonged fastigium, an unproductive cough and an enlarged spleen. In typhoid the headache is more persistent and more severe, the pulse is slow, the pulse-temperature ratio is low, while in tuberculosis it is high. The "rose spots" which ultimately appear in typhoid make the problem easier.

Time will not permit a more detailed discussion of differential diagnosis.

After the question of diagnosis has been settled the problem of treatment presents itself. I recognize that there is no universally accepted treatment, a fact which probably adds interest to the management of these problems.

My own conception of an acceptable plan of treatment in this type of case is that the patient should be made physically comfortable through providing an *acceptable* bed, that he should be strictly isolated to prevent the spread of the disease, that he should receive the most exacting care of the mouth, and that he should receive an abundant diet of nourishing foods prepared from a carefully selected list of acceptable food items. I try to see that these patients receive from 50 to 90 calories per kilogram of body weight, including intermediate nourishment. They receive a fluid dram of U. S. P. dilute hydrochloric acid in a glass of water which is sipped with meals. This is believed to be of service in controlling distension. They must receive an adequate amount of fluids. Satisfactory elimination is maintained. If the patient is complaining of pain or is restless I employ simple sedatives, such as nembutal, never morphine except in treating hemorrhage. The nurse is made responsible for palpating the abdomen at frequent intervals. Any change must be reported to the physician at once. I personally palpate the abdomen at least twice a day. *I believe this to be of the utmost importance.*

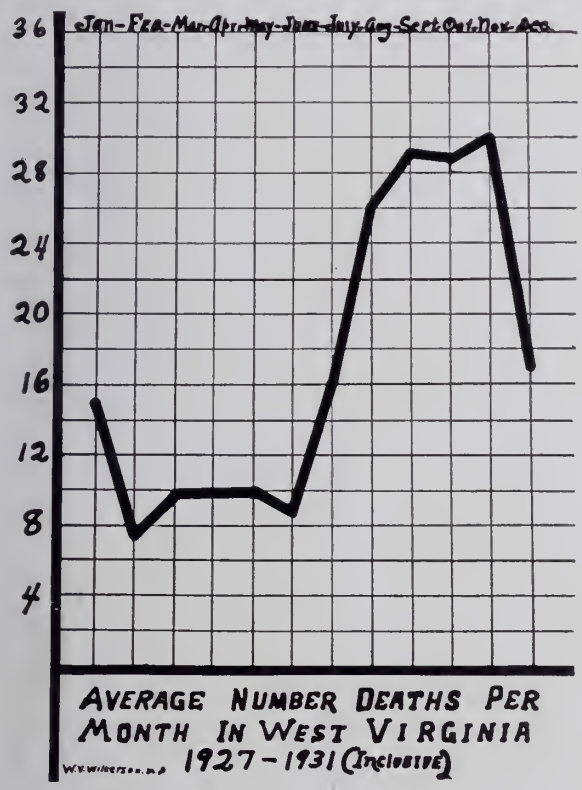
When the patient's fever begins to recede stool and urine cultures are run on alternate days until three consecutive negative reports have been recorded. *This is also regarded as important since the carrier is a real menace in any community.*



Through the courtesy of the West Virginia and Fayette County health units I have assembled some data on the incidence of typhoid in West Virginia and our neighbor states and also in Fayette County.

A study of the data, which I have represented graphically in CHART 1, shows that we have no reason to be proud of our typhoid

incidence which suggests that our sanitary standards must be far from acceptable. I believe it is generally admitted that typhoid is largely spread through milk, water, food, flies and human carriers. Further study of CHART 1 will show that the Fayette County figures are even more unfavorable than the state figures. With a population of about 73,000 we had 54 reported cases of typhoid in 1930, 73 in 1931, and 64 cases to December 2, 1932. We can only surmise the number of unreported cases. The state health department records show that there were 19.1 deaths per 100,000 in Fayette County for the 8 year period 1924-1931 inclusive while the state average was 12.7 deaths per 100,000 for the same period.



The distribution of typhoid cases in Fayette County from January 1, 1932 to December 2, 1932 is represented on CHART 2, (of local interest only so not submitted—WVW).

The seasonal incidence of the disease is demonstrated by the graph shown on CHART 3 which indicates the average number of deaths per month for West Virginia for the 5 year period 1927-1931.

The mortality rate for West Virginia, as indicated by the number of deaths occurring in reported cases, is indicated in the following table:

Year	Reported Cases	Deaths	Mortality in Per Cent
1926	1300	272	20.9
1927	1073	222	20.7
1928	711	175	24.6
1929	886	197	22.2
1930	1243	210	16.9
1931	1203	224	18.6

I have been on the staff of the Coal Valley Hospital since May 15, 1930. During this period there have been reported 184 cases of typhoid in Fayette County. I have treated slightly over 38% of this total (70) cases at our hospital. Since this represents over a third of the total number of reported cases in the County for this period it is felt that the series is large enough to make a statistical analysis of interest.

19 or 27.1% of the 70 cases in this series were women. There were 13 colored patients, 57 white.

The youngest patient with a proved diagnosis of typhoid was 14 months, the oldest a white man of 50. There were 11 patients or 15.7% between the ages of 1 and 10 inclusive; 22 or 31.3% between the ages of 10 and 20; or 36.4% between the ages of 20 and 30; 9 or 12.8% between the ages of 30 and 40, and 2 or 2.9% between 40 and 50. The average age of all patients was 22 (+) years.

The average patient had been ill for 15 (+) days at the time of admission, the individual cases ranging from 2 to 36 days. The average period of hospitalization was 26 (+) days.

23 or 33 (+) % had a cough or other respiratory symptoms.

The average leucocyte count on all patients was 6,550. The lowest count was 3,600 on a child of 4 who made un uneventful recovery, the highest was 14,600 on a colored man who died with a severe broncho-pneumonia which was present on admission.

The Widal was positive in 60 or 85 (+)% of all cases on admission. The admission stool culture yielded only 12 or 17% positive reports while the urine was reported as positive on 21 or 33.3%.

Ten or 14.3% of these patients had received typhoid serum, six within a year and one patient had been inoculated a year before and a few weeks before being admitted to the hospital.

The serology was positive on 4 or 6.9% of these patients. One chancre developed on a young negro while a patient, which is not included in the above figures.

16 or 22.9% developed complications other than bronchitis during the illness. Four patients had intestinal hemorrhages, two having more than a single hemorrhage. There was one perforation. Three patients showed a significant anemia. Three patients had broncho-pneumonia. (I feel that transportation was probably a factor in this.) One child was admitted to the hospital with an empyema of the gall bladder, severe anemia and nitrogen retention. He was operated upon shortly after admission and expired. One patient had an acute cardiac dilatation but recovered. There was prolonged hematuria, interpreted as resulting from an acute nephritis, in one patient and an additional patient with nitrogen retention who also recovered.

A positive Widal in patients *who had not had serum,* a positive stool culture or positive urine culture was made on 61 or 87.14% of these patients. An additional patient had empyema of the gall gladder and typical gross findings on operation, another died of repeated hemorrhages and 4 more had persistent leucopenia with increased lymphocytes, hence positive diagnosis was made in 67 or 98.1% of all cases in the series. Of the remaining 3 cases (a) one entered the hospital on the eighth day of his illness with a diagnosis of "gastritis". He had albumen and casts in the urine, there was a diffuse catarrhal bronchitis, the white blood cell count was 7,200. He remained in the hospital for 26 days, ran a typical clinical typhoid course and was discharged well. (b) One had a questionably positive Widal with bronchitis, positive findings in urine and remained n the hospital 40 days, running a typical clinical course. (c) The remaining case had negative laboratory data, was ill for 48 days, ran a typical clinical course and was discharged well.

Blood cultures were employed in six cases, being positive in 5. In one case the Widal was positive but stool and urine were negative. The patient had had serum. In one case the stool was positive with positive Widal. This man had also had serum. In another case the Widal was positive, both stool and urine cultures negative. In the two remaining cases the Widal, stool and urine were negative.

After talking with a number of physicians I find that a great many believe that a positive Widal is pathognomonic of typhoid. The fallacy of this conception is apparent when it is remembered that patients who have recently received typhoid serum will yield a positive Widal even though they be entirely well. The positive Widal reaction is diagnostic only in individuals who have not received serum or where it is persistently positive at different titrations and even in the latter event it is best to be cautious about accepting the diagnosis solely on the basis of such a laboratory finding.

My gross mortality was 8 deaths or 11.4%. This includes every case that entered the hospital alive, including one patient with hydrops of the gall bladder, a severe anemia as manifested by an erythrocyte count of 2,800,000 and a hemoglobin of 55% and with blood nitrogen retention. This patient was sent into the hospital solely for surgical attention. It also includes two moribund cases, one expiring in about 10 hours and the other in about 30 hours after admission, neither patient being really conscious at any time while in hospital. If these 3 cases are excluded the mortality rate in the remaining 67 cases is 7.44%.

It seems to be difficult to determine what the average mortality rate really is. Cook County Hospital, Chicago, reports a rate of 14 plus %. The rate for West Virginia in 1926 was 20.9%, in 1927 20.7%; in 1928 24.6%; in 1929 22.2%; in 1930 16.9%; and in 1931 it was 18.6%. These figures are obviously too high, indicating that

many non-fatal cases were not reported.

The cause of the 8 deaths in my series has been listed as follows:

Toxemia and exhaustion	4
Perforation and peritonitis	1
Repeated hemorrhages	1
Broncho-pneumonia	1
Cholecystitis (hydrops of gall bladder) hepatitis, nephritis, anemia, etc. with laparotomy	1

Of the 62 patients who survived *9 or 14.2% were discharged as carriers.* I tried to protect the community in which they resided by giving the patient detailed written instructions as to the avoidance of handling food to be eaten by others, the isolation and sterilization of their dishes, and the disposal of excreta after previous disinfection. I also reported their carrier status to their local physician, to the County Health Officer and to the State Health Department.

Each of these patients was advised to have his local physician see him periodically and send specimens of stool and urine to our laboratory or to the State Hygienic Laboratory for culture. One of these complied with these instructions and was finally discharged bacteriologically negative. I have no information on the status of the eight remaining patients *who may be permanent carriers.*

I do not wish to appear critical but it is difficult to avoid the thought that in our community, *the tremendous importance of the typhoid carrier has not been properly stressed or is not adequately realized.* When we attach to this problem the significance which its importance justifies I feel that a typhoid carrier will be regarded as a distinct menace to the public health in his community and energetic measures instituted to see that the hazard is eliminated at the earliest possible date. The major part played by these carriers, directly or indirectly in typhoid epidemics is too well known to epidemiologists to require further comment here.

Further analysis of the patients in this series shows that one of the patients had a primary carcinoma of the pancreas with multiple metastases. (Proved by necropsy). He also had the typical intestinal changes so characteristic of typhoid and had positive Widal with two positive stool and urine cultures.

One patient had had hysterectomy performed for carcinoma about a year before. Her general condition at the time she developed typhoid was only fair and the original diagnosis was metastatic carcinoma but we were unable to find adequate evidence to support this. Stool and urine cultures were run on admission because of abdominal distension and diffuse abdominal pain and were found to be positive. She ran an uncomplicated course.

Two patients were pregnant, neither miscarried.

Definite salpingitis was present in three cases.

There were two patients with severe organic cardiac lesions, one a mitral stenosis, the other an aortic lesion. Both recovered.

One patient, a young colored man, developed a chancre while in the hospital.

One patient had the residuals of an old poliomyelitis.

In concluding this paper I want to stress the unfavorbale position of West Virginia, and especially our own county, in regard to the typhoid problem. The primary purpose of this paper has been to call your attention to the unenviable place we occupy. It is not enough to pass the responsibility back to the poor sanitary conditions in our mining camps. I believe we, as physicians, have a very definite responsibility in the matter and that we can acquit ourselves only when we have made a genuine effort to protect the water supply and the milk supply of our respective communities and when we have given due attention to any possible carriers in our midst. If this responsibility is recognized and accepted I believe there will be steady improvement in the incidence of the disease and that the time will arrive when we need not feel embarrassed, as I do at the present time, when our typhoid rate is mentioned.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

Tuberculosis in the American Negro with its high mortality rate is an urgent problem. The literature dealing with this subject has much to say as to the presence or absence of a racial susceptibility of the Negro to this disease. Many of the theories advanced, however, rest on conjectural rather than factual evidence, and there is a notable lack of definite clinical and pathological data.

Pinner and Kasper compared and reported the postmortem findings in 303 Negro and 219 white patients dead of tuberculosis. The study not only points out certain significant differences between the two races, but also throws light on the pathogenesis of tuberculosis in general. An abstract of the article follows:

TUBERCULOSIS IN THE NEGRO

The authors were impressed by apparently significant differences between colored and white patients dead of tuberculosis and decided to replace their impressions by carefully collected data. It has been shown that the most significant factor in the development of tuberculosis is the propagation of lesions within the body, and that one of the most important and probably the only definitely established fact about immunity is the diminution of spread of reinfecting bacilli in a sensitized organism as compared with a non-allergic one. A comparison of white and colored patients dead of tuberculosis as to the relative frequency of lymphatic and haematogenous spread (paying particular attention to the type and extent of metastases) was deemed to be of value in that it would indicate with fair reliability the degree of resistance during life. Some of the more notable findings are as follows:

Miliary Tuberculosis.—Miliary tuberculosis was found at least twenty per cent more frequently in the Negro in every decade of life up to 50 and this is believed to be indicative of a low level of resistance. However, since on the other hand it may indicate nothing more than a mechanical accident, all cases of miliary tuberculosis are excluded from further consideration, and the remaining data deal with 190 Negroes and 185 whites.

Haematogenous Spread.—Pointing out that the absence of metastases does not mean that blood stream invasion has not occurred but may rather denote the degree of resistance (specific or non-specific) to such spread, the authors observe that haematogenous propagation occurs twice as often in the Negroes as in the whites, only grossly visible lesions being taken into account.

Lymphatic Spread.—From the point of view of resistance, spread via the lymphatics regularly occurs following first focalization and indicates presumably that state of resistance which is characteristic of "virgin soil."

Eliminating all calcified foci in lymph nodes since they might be part of the primary complex and taking into consideration only grossly visible lesions, spread via the lymphatics occurred nearly seven times as frequently in the colored as in the white group.

Isolated Phthisis.—In contrast to the foregoing is the occurrence of isolated phthisis or tuberculous disease of one organic system with no evidence of involvement of distant organs, and which would presumably indicate a high degree of resistance.

This type of lesion was present in nearly half the white patients and less than 3 per cent of the Negroes.

Duration of Disease.—This information which was available for 96 whites and 47 Negroes gave a total average for Negroes of 324 days and for whites 995 days.

The authors were aware that the nature of their material (postmortem) imposes limitations, since the differences noted between the two races are probably more pronounced on the postmortem table than in a sanatorium, and more definitely there than in an ambulant clinic. Nevertheless they feel that the material presented justifies some rather definite conclusions. In summary they find that the differences between Negroes and whites are as follows:

"The Negro shows much more frequently haematogenous and lymphogenous spread after a definite focus of tuberculosis is established; this tendency is indicated, too, by the fact that miliary tuberculosis is greatly more frequent in the Negro at all ages. His foci are more frequently exudative in nature, they are more frequently massive, and more often surrounded by collateral infiltrations or haemorrhagic zones. The most conspicuous of the

differences is the much greater tendency to lymphatic involvement. The Negro exhibits at times a predominantly lymphatic involvement, which is an exceedingly rare occurrence in white adults. A generalized nodular tuberculosis occurs in some instances in Negroes which is hardly ever seen in whites. In addition, tuberculous lesions in the Negro perforate more often than in whites."

These pathological peculiarities in the Negro are submitted as proof of a diminished resistance.

Various Theories Analyzed.—Several writers have offered explanations to account for the lower resistance of the Negro:

a) It is said that the Negro, having been in contact with tuberculosis for a much briefer time than the white has not as yet had an opportunity to acquire the same measure of "inherited immunity."

The authors reply that this stands on unsafe ground since a true inheritance of acquired immunity has never been demonstrated.

b) It is said that the Negro escapes childhood infection more frequently than the whites; therefore, an infection acquired later in life occurs in virgin (non-allergic) soil and produces rapidly progressive "childhood type" tuberculosis.

The authors point to the results of large surveys, notably those of Opie and Aronson, which indicate clearly that this theory must be abandoned.

c) It is alleged that the apparent differences are due to environmental conditions and to the mental attitude of the Negro in regard to disease.

The authors comment that undoubtedly the greater opportunity for infection in crowded, unsanitary quarters from many undiagnosed cases of open tuberculosis is probably one of the most important factors causing the high tuberculosis incidence in the Negro, but it is difficult to see how environmental conditions contribute to the qualitative peculiarities in Negroes. When unfavorable living conditions in Germany sent the tuberculosis mortality soaring, no reports came forth to tell of qualitative changes in the course and in the anatomical character of the disease.

d) It is suggested that there exists a true racial difference between the two races, which confers high resistance on one and low resistance on the other race.

This hypothesis recommends itself strongly to the authors because of the apparent impossibility of explaining the matter by any other alternative, and while this does not constitute proof, it seems at the present time the logical postulate and further studies should show whether it can be converted into an actual fact.

They would deplore violent attacks against such a theory on the ground that its acceptance might paralyze campaign measures now in use.

Pathological Peculiarities of Tuberculosis in the American Negro, Max Pinner and Joseph A. Kasper, Am. Rev. of Tuberc., Nov. 1932.

THE HISTORY OF DERMATOLOGY

By WILLIAM ALLEN PUSEY, A.M., M.D., LLD.

This entertaining history of the rise of dermatology (and such books are few in the English language), is of particular interest to the dermatologist but is of sufficient breadth to be of interest to every physician who enjoys any book dealing with the romance of medicine. Dr. Pusey, tho' laying no claim to comprehensive history, has in this little book given salient historical periods in the evolution of dermatology and has sketched in brief concise words figure heads of each period. The book is well written and does not tax one's book-reading energy. At the end there is a historical index of valuable information relative to many skin diseases. This represents much labor on the part of the author and co-workers in delving into numerous sources.

The publishers, Charles C. Thomas Co., of Springfield, Ill., are to be complimented on the splendid preparation of the book which contains over two hundred pages and is printed in large type on polychrome enamel paper with an embossed orange and gold binding of DuPont Fabricoid linen. The price is $3.00 postpaid.

ABNORMAL REACTIONS

The atypical person is one who is emotionally unstable. Atypical individuals can be discovered in 3 classes: First, there are those who drag their feet, who are lazy, who do not get into activities. Second, there are those who are not particularly lazy and who have a great deal of ability but do not cooperate with other people. Third,there are those who are boastful, showing something of the bully. Instructors constantly see these three types of atypical cases in their work. To spend more time straightening out these boys individually and to keep the normal boys active in groups are indeed worthwhile projects, suggests R. K. Atkinson in "Athletics for the Atypical," in *Hygeia,* the Health Magazine.

PRESIDENT'S PAGE

The 66th annual convention of the West Virginia State Medical Association—the largest meeting ever held by our society—is now a matter of history. Returning to their homes after three strenuous days of entertainment and instruction, the doctors from all over the state carried with them the most pleasant recollections of the cordial hospitality of the capital city. On behalf of the visiting members of the Association, let me take this opportunity to thank the members of the Kanawha Medical Society and the Kanawha Medical Auxiliary for their efforts, and congratulate them on their success in making this last convention the best we have ever enjoyed.

The first article in this issue of the Journal is the address delivered by your President. For the sake of emphasizing some of the important points an epitome of that address is included in this message.

The increased cost of medical care is not out of proportion to the increased benefits to be derived from modern medical practice.

The ideals of conservative medical practice are opposed to the various schemes that have been advanced for the practice of medicine under an insurance plan, or under a system of state medicine.

The monthly payment plan for medical care is desirable from the standpoint of financial convenience, but, so far, no practical plan has been evolved which will permit us to practice medicine on that basis and at the same time maintain the high standards and ideals of our profession.

In some localities in our State, list hospital practice may be condoned as a necessary evil.

Employees should not be called upon to pay for the medical and surgical costs of industrial injuries.

Employers should not exploit their employees by taking a profit out of the check-off collected from the employees for medical and hospital care.

The pre-payment insurance plans for hospital service should be limited to hospital costs, strictly avoiding any connection with medical and surgical costs. All of the hospitals in a given territory, acting as a unit, should either adopt or reject the pre-payment scheme.

The state institutions caring for the sick should have the benefit of medical supervision by a non-partisan State Health Council.

The medical care and hospitalization of the indigent is properly considered an obligation of the entire community.

The medical practice act should make it possible to revoke the license of any physician who lends his name and protection to a quack.

Any infringement upon the proper domain of the private practitioner by state or county health departments should be discouraged.

The State Miners' Hospitals have outlived their usefulness for the particular purpose for which they were intended, and should be abolished.

It is necessary for us to get together frequently and discuss our medical problems. In this fast moving age the dream of today may become the reality of tomorrow, but on the other hand the accepted truism of today may become the absurdity of tomorrow.

D. A. MacGregor
President.

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THE CHARLESTON MEETING

The Sixty-sixth Annual Meeting of the West Virginia State Medical Association, which was held in Charleston on May 22-24, 1933, is now history. It was not only the largest meeting the Association has ever held but also one of the best. With an excellent scientific program, splendid hotel and meeting facilities, and with a wide-awake, sociable host society, there was little left to be desired.

The Journal takes this opportunity to congratulate Dr. D. A. MacGregor, our state President, on the splendid manner in which he conducted the several scientific sessions and business meetings. To Dr. Roy Ben Miller of Parkerburg, President-elect, we extend our heartiest wishes for a successful and profitable administration in 1934.

The fine success of the Charleston meeting was due largely to the splendid work and the cordial hospitality of the members of the Kanawha Medical Society. Too much credit can't be given to these host doctors who contributed so much to the enjoyment of our visiting members.

We wish also to compliment the several hospitals and institutions that provided scientific exhibits for the meeting. These were the Davis Memorial Hospital, Elkins, the Charleston General and the Mountain State hospitals, Charleston, and the Hillcrest Sanitarium, Charleston. The Section of Pediatrics also displayed a most interesting exhibit. We hope the scientific exhibits will become an annual custom.

It would be impossible in this short space to give due credit to all those who contributed some part to the success of the Charleston meeting. So we will simply say that it was one of the most pleasant and profitable medical gatherings in the history of our Association.

THE MITCHELL CASE

A final decree was issued by the circuit court of Cabell County on May 17 forever restraining R. B. Mitchell, Huntington, from the practice of medicine in West Virginia. Thus the long, hard fight of the Cabell County Medical Society to stop Mitchell's activities was brought to a successful termination.

A brief review of the above case might be in order. Mitchell a Chiropractor turned Naturopath, located in Huntington about one year ago and began a series of extravagant and misleading advertisements in the Huntington newspapers. His advertising material was so flagrant that the Cabell County Medical Society, in an effort to protect the public, brought Mitchell to trial for practicing medicine without a state license.

This effort failed. The Society then applied to the circuit court of Cabell County for an injunction against Mitchell. This new move went to the state supreme court and, late in March, the supreme court held that a license to practice medicine was a property right, to protect which any physician could sue in equity on behalf of himself and his fellow practitioners.

This decision was the most important phase of the long and tedious fight against Mitchell. It established a point of law that should be of great value to the county medical societies and county health officers of West Virginia in ridding their respective territories of unlicensed quacks.

Following this ruling of the supreme court, the case was remanded to the Cabell County circuit court and on May 17 the final decree

was entered. Mitchell was given 30 days in which to file an appeal but in view of the futility of proceeding further, it is understood that Mitchell is already arranging his affairs to leave the state.

In the final decree of the Cabell County circuit court, we quote the following articles restraining Mitchell from:

(a) Diagnosing . . . any human ailment, infirmity or affliction by any method or manner whatsoever.

(b) Treating or prescribing treatment for any human bodily or mental ailment or sickness by any manner or means whatsoever, whether or not such treatment involves the administering or prescribing of drugs or similar agency, or the performance of any surgical operation.

(c) Giving advice to any person suffering from any ailment or sickness upon any course of conduct or any rule or manner of living to be followed by any such person for the benefit of improvement or preservation of such person's mental or physical health.

(d) Opening or maintaining an office for the purpose of doing at such office any of the acts herein prohibited and enjoined.

(e) Announcing to the public in any way his readiness, willingness, ability or right to treat any sick or afflicted person in any manner whatsoever, or his readiness, willingness, ability or right to do any of the acts herein prohibited and enjoined.

(f) Charging or receiving in any manner whatsoever, any fee, compensation or reward of any kind for doing or purporting to do any of the acts herein prohibited and enjoined.

While the Association was keenly interested in the Mitchell case, both financially and otherwise, credit for this important legal victory must go to the vigorous and energetic doctors in Cabell County. We feel that the supreme court opinion in the Mitchell case was one of the most far-reaching legal decisions in the history of our state medical association.

CORPORATE PRACTICE OF MEDICINE

Under the heading "Onerous Medical Practice Indulged in by West Virginia Mines," an interesting and intelligent editorial recently appeared in Commerce and Industry, national business magazine, concerning the injunction suit of Dr. J. T. Nolen versus the Valley Camp Coal Company. Dr. Nolen recently applied for an injunction in the circuit court of Kanawha County to restrain the coal company from practicing medicine without a license. The editorial follows:

"The right of corporations to practice medicine and surgery has come up for a court hearing. It is about time. The private subsidization of medical interests by an industrial organization has been a sore spot in the side of the ethical practice of medicine. This condition has been intensified by recent charges revealing that the dispensation of narcotics, cocaine, opium, morphine, heroin, etc., used by company doctors in treating patients has evolved into a racket under the "check-off" system in vogue. The "check-off" system comes under the head of an, "abominable system of medical practice."

"The action of Dr. J. T. Nolen, a prominent physician of West Virginia, in asking for an injunction against certain West Virginia coal operators to halt the 'practce of medicine,' brings to light this pernicious system and establishes the need for public support of this courageous doctor. As a former employee of the defendent corporation, Dr. Nolen knows whereof he speaks. In bringing his action, in behalf of all other licensed physicians in the state, Dr. Nolen has set the ball rolling. He deserves the support of every enlightened and civic minded citizen.

"Wide comment has already followed his initial legal action. The bill of complaint asserts that the company deducts from each married employee $1.00 monthly and from each single employee 50 cents monthly for a 'doctor' under a 'check-off' system for which employees are to receive medical and surgical treatment from company physicians. In view of the fact that these company doc-

tors receive far less than the amount collected, it is alleged that the remainder is kept by the operating company for its own uses in the purchase of and distribution of drugs and narcotics in an illegal manner.

"A timely subject. Socialization of doctors may be a good feature, but in subsidization and in an abominable system of medical treatment by an industrial organization is contrary to the best interests of both the profession and the public."

HEART ASSOCIATION FORMED

The Association Heart committee met May 22 in Charleston with Dr. W. D. Stroud, Secretary of the American Heart Association. The meeting resulted in the organization of the West Virginia Heart Association and the following officers were elected: President, Dr. Oscar B. Biern, Huntington; Vice-President, Dr. G. H. Barksdale, Charleston; and Secretary-Treasurer, Dr. R. J. Condry, Elkins.

The first objective of the Association is to become affiliated with the American Heart Association. Certain requirements are necessary to accomplish this and it is hoped that the West Virginia group will meet with approval within a short time.

The objects of the W. Va. Heart Association are as follows:

1. To gather facts relating to heart disease in West Virginia.
2. To develop and apply a uniform classification and study of heart affections.
3. To disseminate information in regard to heart disease and the methods for its prevention and care.
4. To limit the activities of the association to the medical profession of the state until such time as the directors of the association deem it expedient to expand its activities.

To accomplish the above objectives requires the hearty cooperation of the medical profession of the state and the willingness of each and every physician to do his part. The completed program is not available just now and further notes as to the program, progress and plans of the Heart Association will appear in the Journal as the occasion arises.

OBITUARY

DR. ALONZO C. VANDINE

Dr. Alonzo Clark Vandine, 61 years of age, died at his home in Charleston on May 2 following an illness of influenza. He had partially recovered and was thought to be on the road to recovery when his death came unexpectedly.

Dr. Vandine was widely known throughout the state, both as a physician and in political circles. He was a former member of the West Virginia legislature and, in 1928, a candidate for the Republican nomination for Governor. Until recently he served as medical examiner for the Workman's Compensation Department.

The deceased was born at Sissonsville, West Virginia, in 1872, and received his medical education at the Louisville Medical college. He first located at Clendenin, but moved to Charleston about 15 years ago. He was a member of the State Association through the Kanawha Medical Society. Dr. Vandine is survived by his widow and two brothers.

DR. LOUIS T. BOYER

Dr. Louis T. Boyer, 35 years of age, of Hollidays Cove, West Virginia, died in Mercy Hospital, Pittsburgh, on May 1 of recurrent agranulocytic angina. He was well known throughout the northern panhandle, where he had been in active practice for 10 years.

Dr. Boyer was graduated in medicine from the University of Pittsburgh in 1923 and received his West Virginia license the same year. In 1924 he was licensed in Ohio and also maintained an office in Steubenville. A resolution of condolence on his death was adopted at a special meeting of the Hancock County Medical Society.

DR. JULIAN D. ARBUCKLE

Dr. Julian D. Arbuckle, 57 years of age, died of heart disease at his home in Lewisburg on the morning of May 3. He was one of the most prominent physicians in Greenbrier county and a former county health officer there. Dr. Arbuckle was a former member of the Greenbrier Valley Medical Society. He was stricken while making calls and died shortly after being removed to his home.

Dr. Arbuckle is survived by seven children. Three brothers also survive, including Dr. Howard Arbuckle of Davidson College and Dr. J. A. Arbuckle of Kentucky, formerly of Charleston.

COUNTY SOCIETY NEWS

WYOMING COUNTY

Dr. B. W. Steele of Mullens was elected President of the Wyoming County Medical Society at the last meeting, which was held at the Mullens Hospital. Dr. T. W. Heironimus of Alpoca was elected vice-president and Dr. Ward Wylie was reelected Secretary-Treasurer. Dr. J. F. Biggart was chosen to represent the society at the state meeting, with Dr. D. D. Wilkinson as alternate.

WARD WYLIE, Secretary.

CABELL COUNTY

The regular monthly meeting of the Cabell County Medical Society was held at the Hotel Pritchard, Huntington, on the evening of May 11 with a fine attendance.

The scientific program was contributed by Dr. J. E. Hubbard and Dr. C. B. Wright. Dr. Hubbard gave a paper on "Cancer of the Buccal Mucous Membrane. Dr. Wright's subject was "Fracture of the Jaw." Both of these papers were interesting and instructive and enjoyed a good discussion from the floor.

Dr. F. J. Hoitash, Huntington, will return early in June from Madrid, Spain, where he read a paper before the International Congress of Ophthalmology there on April 16. Dr. Hoitash sailed for Europe on April 4. W. W. STRANGE, Secretary.

MONONGALIA COUNTY

The essayist at the May 2 meeting of the Monongalia County Medical Society was Dr. Walter E. Vest, Huntington, Past President of the West Virginia State Medical Association. Dr. Vest's subject was "Gastric Syphilis." This was an especially valuable paper from the standpoint of the general practitioner and provoked considerable discussion from the members in attendance.

The meeting was held in the Hotel Morgan, Morgantown, and a dinner was served prior to the scientific program. G. R. MAXWELL, Secretary.

OHIO COUNTY

Dr. P. Brooke Bland, Professor of Obstetrics at Jefferson Medical College, Philadelphia, was the scientific essayist at the April 28 meeting of the Ohio County Medical Society which was held at the Ohio Valley General Hospital, Wheeling. His subject was "The Prevention of Maternal Mortality from Puerperal Hemorrhage from the Standpoint of the General Practitioner."

This was a most able and instructive paper. Discussion was led by Dr. D. A. MacGregor, Dr. M. B. Williams and Dr. J. G. Thoner.

RUSSELL C. BOND, Secretary.

KANAWHA COUNTY

An overflow meeting of the Kanawha Medical Society was held in the Public Library building, Charleston, on the evening of May 9. The essayists were Dr. H. A. Bailey and Dr. Robert King Buford, both of Charleston. Dr. Bailey gave a report on "Newer Methods in the Postoperative Management of Peritonitis Following Appendicitis." Dr. Buford's subject was "Borderline Hyperthyroids." Both of these papers were highly instructive and freely discussed.

Following the scientific program, a number of business matters were taken up. Plans for the state meeting were discussed and the various convention committees reported that everything was in readiness for the visiting doctors.

M. F. PETERSEN, Secretary.

MERCER COUNTY

An interesting meeting of the Mercer County Medical Society was held in the Memorial Building, Princeton, on the evening of April 20 with an unusually good attendance. The essayists of the evening were Dr. John E. Cannaday and Dr. P. A. Tuckwiller of Charleston. Dr. Cannaday talked on "Surgical Aspect of the Gall Bladder" and Dr. Tuckwiller on "Jaundice."

Both of these papers were very instructive and were freely discussed by the members present. A vote of thanks was given the essayists for their excellent program.

A committee composed of Dr. R. O. Rogers, Dr. R. R. Stuart and Dr. T. E. Vass was appointed to draw up suitable resolutions on the death of Dr. J. B. Kirk, who died on April 19.

Following adjournment, the society enjoyed a social hour at the home of Dr. J. R. Vermillion where the Princeton doctors furnished a delightful after-meeting lunch. R. R. STUART, Secretary.

FAYETTE COUNTY

Dr. M. F. Petersen of Charleston was the scientific essayist at the May meeting of the Fayette County Medical Society which was held at the Hill Hotel, Oak Hill on the evening of May 9. His subject was "Diarrhea in Infancy."

This paper was ably presented and general discussion was led by Dr. W. W. Koiner of Beckley and Dr. G. G. Hodges of Mount Hope.

A case report of Meningococic Meningitis was given by Dr. W. P. Bittinger.

Dr. Ralph Hogshead of Montgomery was elected Secretary-Treasurer to succeed Dr. Gilbert Daniels, who is leaving our county to locate at Walton, Roane County, W. Va.

Dr. P. E. Prillaman was received into our society by transfer from the Raleigh County Society.

Dr. H. A. Walkup, as a tribute to his loyalty to our society in the past, was made an honorary member. RALPH HOGSHEAD, Secretary.

LOGAN COUNTY

The Logan County Medical Society held its regular May meeting on the evening of the 17th at the Hatfield-Lawson Hospital with 21 members and visitors present. After the transaction of routine business, including the election of Dr. Paul W. Palmer, of Lorado, to membership, the following scientific program was rendered: Dr. Geo. F. Grisinger, Superintendent of the Rutherford Tuberculosis Sanitarium at Beckley, addressed the Society on "Collapse Therapy in Tuberculosis"; and Dr. T. R. Bolling, a member of the staff of the same institution, read a paper on "Tuberculous Laryngitis."

Much interest was shown in both subjects, and especially in that of Dr. Grisinger as indicated by the amount of discussion and the number of questions asked.

Dr. B. D. Smith, of Omar, recently spent a week at the Rutherford Tuberculosis Sanitarium in a study of the recent advancements in the diagnosis and treatment of tuberculosis. Dr. Smith reports a very profitable week and recommends that all physicians who can, should take advantage of the invitation this institution extends to them to spend some time with them in reviewing up on tuberculosis.

Dr. B. L. Hume of Mallory who has been ill for a few weeks, has recovered and is back at his practice. Dr. Augustus Holderfield of Man relieved Dr. Hume during his illness.

Dr. Fred E. Brammer of Dehue attended the Tri-State Medical Association meeting at Huntington on Thursday afternoon, May 18th, and reports a good meeting.

FRED E. BRAMMER, Secretary.

GENERAL NEWS

ROY BEN MILLER, M. D.

OUR NEW PRESIDENT

Dr. Roy Ben Miller, Parkersburg, was unanimously elected President of the West Virginia State Medical Association for 1934 at the recent state meeting in Charleston. This popular choice came as a reward to Dr. Miller for his many years of devoted service to the Association and in recognition of his sterling qualities as a surgeon and as a man of vision and understanding.

After serving his county medical society in various capacities for many years, Dr. Miller was elected to the Council of the Association. As a member of the Council he was soon recognized for his sound judgment and also for his faithful attendance at every meeting. After three terms on the Council, Dr. Miller withdrew at Parkersburg last year and held no office in the Association at the time of his election to the Presidency.

Under his able guidance and leadership in 1934, the Association is expected to continue its progress toward a more unified profession and toward the upbuilding of scientific medicine in this state.

Other officers elected at the Parkersburg meeting were Dr. Albert G. Rutherford, Welch, First Vice-

president, Dr. G. H. Barksdale, Charleston, Second Vice-president, and Dr. T. M. Barber, Charleston, Treasurer.

New councillors elected were Dr. R. U. Drinkard, Wheeling, and Dr. B. S. Clements, Matoaka. Councillors elected to succeed themselves were Dr. G. R. Maxwell, Morgantown, Dr. M. T. Morrison, Sutton; Dr. Ray M. Bobbitt, Huntington; Dr. B. W. Steele, Mullens and Dr. G. A. Smith, Montgomery.

Dr. R. J. Wilkinson, Huntington, was elected Chairman of the Committee on Scientific Work for next year's meeting. The other two members elected were Dr. E. B. Henson, Charleston, and Dr. C. O. Reynolds, Bluefield.

Dr. Robert King Buford, Charleston, was elected a member of the Committee on Professional Relations to succeed Dr. J. R. Shultz, deceased.

Members of the Committee on Medical Education elected were Dr. Howard T. Phillips, Wheeling, Chairman; Dr. Ward Wylie, Mullens, and Dr. S. L. Cherry, Clarksburg.

Dr. R. H. Walker, Charleston, was elected to succeed himself as delegate to the American Medical Association and Dr. Howard T. Phillips, Wheeling, was reelected alternate.

Huntington was selected as the place for the 1934 meeting.

Sectional officers elected at the Charleston meeting were as follows:

Eye, Ear, Nose and Throat: Dr. Harry V. Thomas, Fairmont, Chairman; Dr. W. F. Beckner, Huntington, Secretary.

Section on Pediatrics: Dr. Robert C. Hood, Clarksburg, Chairman; Dr. Russell C. Bond, Wheeling, Secretary.

Section on Surgery: Dr. Frank V. Langfitt, Clarksburg, Chairman; Dr. Russell B. Bailey, Wheeling, Secretary.

The complete record of the Charleston meeting, together with all committee reports and the financial statement of the Association, will be published in the July issue of the Journal.

GOLF TOURNAMENT WINNERS

Dr. R. H. Dunn, Charleston, and Dr. William A. Welton, Fairmont, won the low gross and low net scores respectively during the recent Association golf tournament at the Charleston meeting. Runners-up were Dr. B. F. Brugh, Montgomery, second low gross score, and Dr. J. P. Lilly, Charleston, second low net score.

In the blind bogey tournament the winners were Dr. Lorne A. Lyon, Wheeling, first; Dr. Robert J. Reed, Jr., Wheeling, second; Dr. A. R. Lutz, Huntington, third; and Dr. Russel Kessel, Charleston, fourth.

RADIOLOGICAL CONGRESS

Chicago during the World's Fair will welcome the largest radiological congress ever held in the United States when the four national radiological societies will meet there in joint convention. Other members of the medical profession are invited as well. The American Congress of Radiology is scheduled for September 25-30, inclusive at the Palmer House. According to Dr. Henry K. Pancoast of Philadelphia, president of the Congress, all physicians, physicists, biologists and others connected with the Allied sciences will be made welcome at the Congress.

The four radiolgoical societies sponsoring the Congress who have eliminated their regular annual meetings for 1933 in its favor are: The American College of Radiology, the American Radium Society, the American Roentgen Ray Society, and the Radiological Society of North America. The Chicago Roentgen Society will also participate.

REFORESTATION DOCTORS NEEDED

According to a recent issue of the Bulletin of the American Medical Association, the surgeon general of the United States Army charged with the duty of organizing the necessary medical service for the members of the recently established civilian conservation corps is asking for applications from qualified physicians who desire to participate in that service. Officers of the medical reserve corps of the rank of Captain or Lieutenant and other physicians who wish to be identified with this movement—in forestry camps or army posts—should make application to the Commanding General of the corps area in which they reside.

Information available is to the effect that 538 conservation work camps will be immediately established in 12 western states and that nearly 110,000 men will be assigned to duty in those camps. In the eastern section of the country about 10,000 men will be encamped.

Medical personnel will be assigned at the rate of one Captain and two Lieutenants of the Medical Reserve corps for each thousand men. In those areas in which the camp units are widely separated contract surgeons will be assigned on a part time

basis, at an average compensation of $125 per month. Two men in each unit will be trained in first aid and in sanitary inspection work.

Hospital service will be supplied for men in the camps in need of such service because of illness or disabilities contracted in line of duty during the period of encampment. Government hospitals will be used if located near the camps; otherwise the facilities of civilian hospitals will be utilized.

Medical service to be provided includes thorough physical examination, vaccination against smallpox, typhoid—paratyphoid immunization, and outpatient and hospital treatment. It is expected that several hundred physicians in civil life will be brought into service, either as officers of the Medical Reserve corps or in the capacity designated by army rules as contract surgeons.

It is understood that approximately 250,000 men will be enrolled for camp duty through the U. S. Department of Labor.

WHITE HOUSE CONFERENCE

The West Virginia White House Conference on Child Health and Protection and the annual meeting of the West Virginia Public Health Association were held in Charleston on May 28-30, 1933. Approximately 750 persons were in attendance for the two meetings. Following the close of the Conference, the business meeting of the Health Association was held on Wednesday, May 31.

Dr. George Lyon, Huntington, Chairman of the White House Conference for this state, presided at the general meetings. Among the members of the Association who took part in the meetings were Dr. James R. Bloss, Huntington, Dr. W. Byrd Hunter, Huntington, Dr. David Littlejohn, acting Health Commissioner, Dr. R. H. Paden of the State Health Department, Dr. M. F. Petersen, Charleston, Dr. Robert C. Hood, Clarksburg, and Dr. D. A. MacGregor, President of the West Virginia State Medical Association.

A. M. A. MEETING

It is hoped and expected that West Virginia will be well represented at the Annual Meeting of the American Medical Association, Milwaukee, on June 12-16, 1933. The A. M. A. has planned one of the best programs in its history and, in spite of the slump in attendance at the New Orleans session last year, a record turnout is expected at Milwaukee.

One of the features of the Milwaukee meeting will be the clinical lecture program in Plankinton Hall in the Milwaukee auditorium. This will begin at 2 o'clock on Monday afternoon, June 12, and will continue through the morning and afternoon of Tuesday, June 13. Among the lecturers will be Dr. L. W. Dean, St. Louis, Dr. Harold N. Cole, Cleveland, Dr. Peter Bassoe, Chicago, Dr. Thomas P. Sprunt, Baltimore; Dr. Carl A. Hedblom, Chicago; Dr. Walter E. Dandy, Baltimore; Dr. I. Newton Kugelmass, New York; Dr. Russell L. Haden, Cleveland and Dr. L. M. Hurxthal, Boston.

The registration bureau, all scientific and technical exhibits and all section meetings will be held in the Milwaukee Auditorium. The house of delegates will hold its meetings in the grand ball room of the Hotel Schroeder, which will be the headquarters hotel for the convention.

HOSPITAL MEETING DATE

The next annual meeting of the Hospital Association of West Virginia will be held at Clarksburg on Tuesday, October 3, 1933, it has just been annuonced by the board of trustees. Dr. A. G. Rutherford, President, is expected to start work with his committees in the next few weeks preparing the program and other details incident to the annual session.

It is expected that the hospital meeting this year will deal with many questions concerning hospital economy, monthly payment plans for hospital service, hospital budgets and similar subjects concerning the financial side of hospital management. Following the usual custom, the October 3 meeting will open at 10 o'clock A. M., and will close with the annual banquet the same evening.

COMING MEETINGS

Metabolic Disorders will be the theme of the 1933 Graduate Fortnight of the New York Academy of Medicine. Two weeks of intensive study, from October 23 to November 3 inclusive, will be devoted to this important branch of medical science. The theoretical, physiologic and pathologic phases of Metabolism, as well as of certain of the associated endocrinologic problems will be treated in a series of round table discussions and clinical demonstrations. The latter will be given in fifteen of the leading hospitals of New York City.

Among the speakers who will participate in the Graduate Fortnight are included Drs. Eugene F. DuBois, Harold E. Himwich, Walter W. Palmer, Frank H. Lahey, Donald Dexter Van Slyke, Joseph

C. Aub, Ashley Weech, Dana W. Atchley, Erwin Brand, Emanuel Libman, Rollin T. Woodyatt, Priscilla White, Nellis B. Foster, Herman O. Mosenthal, William S. Ladd, Henry W. Geyelin, Albert A. Epstein, John P. Peters, Henry C. Sherman, Samuel W. Clausen, Alfred F. Hess, Wilder G. Penfield, Oscar M. Schloss, Henry L. Jaffee and Charles F. Bodecker.

An exhibit will be shown in connection with the Fortnight, material having been collected from many institutions in Metropolitan New York. The various aspects of metabolic disorders will be covered in this exhibition including the history of metabolism; dietary constituents and their derivatives; drug and other therapeutic measures; general and special pathological metabolism; and laboratory methods and procedures.

The subjects will be illustrated by means of charts, graphs, photographs, microphotographs, transparancies, x-rays, gross and pathologic specimens.

The profession of the country is invited to participate in the Graduate Fortnight.

A complete program and registration blank may be secured by addressing Dr. Frederick P. Reynolds, The New York Academy of Medicine, 2 East 103rd Street, New York City.

The American College of Physicians will hold its Eighteenth Annual Clinical Session in Chicago, with headquarters at the Palmer House, April 16-20, 1934.

Announcement of these dates is made particularly with a view not only of apprising physicians generally of the meeting, but also to prevent conflicting dates with other societies that are now arranging their 1934 meetings.

Dr. George Morris Piersol, of Philadelphia, is President of the American College of Physicians, and will arrange the Program of General Sessions. Dr. James B. Herrick, Emeritus Professor of Medicine of Rush Medical College, Chicago, has been appointed General Chairman of local arrangements and will be in charge of the Program of Clinics. Mr. E. R. Loveland, Executive Secretary, 133-135 S. 36th Street, Philadelphia, Pa., is in charge of general and business arrangements, and may be addressed concerning any feature of the forthcoming Session.

The thirty-fourth Annual Meeting of the American Proctologic Society will be held in Chicago on Monday and Tuesday, June 12-13, 1933. Headquarters will be in the Stevens Hotel. The secretary of the organization is Dr. Frank G. Runyeon, 1361 Perkiomen Avenue, Reading, Pa.

NEW PRESCRIPTION LAW

For the benefit of the members of the Association who are interested in the new federal regulations concerning the prescribing of medicinal liquor, we publish herewith an extract of the regulations recently issued by the Federal Supervisor of Permits for this district. These regulations, which went into effect on May 15, were recently concurred in by our own state legislature. The regulations follow:

Only spirituous and vinous liquor may be prescribed for medicinal purposes. The term "spirituous liquor" shall be construed as alcohol, whiskey, rum, brandy, gin, and such like liquor produced by distillation. The term "vinous liquor" shall be construed as wine containing more than 3.2 per centum of alcohol by weight, being the fermented juice of the grape, and such berries as are commonly used in the production of wine.

(Note. Vinous and malt liquors, and fruit juices, containing not exceeding 3.2 per centum of alcohol by weight do not come within the purview of the National Prohibition Act, as amended).

Prescriptions for any liquor other than spirituous and vinous liquor for medicinal purposes shall be void. The following preparations listed in the United States Pharmacopoeia and National Formulary classed as fit for beverage purposes are held to be spirituous liquors and must be prescribed in the same manner and under the same conditions as spirituous liquors:

Elixir oramaticum (elixir aromatic), Elixir anisi (elixir of anise), Elixir oramaticum rubrum (red aromatic elixir), Elixir surantii amari (elixir of bitter orange), Elixir cardamoni compositum (compound elixir or cardamon), Elixir glycyrrhizae (elixir of licorice), Elixir glycyrrhizae aromaticum (aromatic elixir of glycyrrhiza), Elixir taraxaci compositum (compound elixir taraxacum), Elixir terpini hydratis (elixir of terpin hydrate), Spiritus aetheria (spirit of ether or Hoffmann's drops), Spiritus myrciae compositus (compound spirits of myrcia), Tincture amara (bitter tincture), Tinctura aromatica (aromatic tincture), Tinctura aurantii dulcis (tincture sweet orange peel), Tinctura limonis corticis (tinc-

ture of lemon peel) and Tinctura zingiberis (tincture of ginger).

Nothing in these regulations shall be construed as authorizing the prescribing by physicians of any liquor, or compounds thereof, including spirituous and vinous liquors, in any manner or in any quantity in any State or territory the laws of which prohibit such prescribing.

A physician shall not prescribe for a patient at any one time a quantity of spirituous or vinous liquor in excess of what he in good faith believes is required to meet the medicinal needs of the patient as shown by the patient's condition at the time of prescribing.

No prescription shall be issued for a quantity that in the judgment of the physician will last, when used as prescribed, more than thirty days; except that if a patient's medicinal needs will with reasonable certainty continue for a period longer than thirty days, a physician may prescribe at one time a quantity of spirituous or vinous liquor sufficient to meet such needs, in which case the physician shall endorse on the prescription the word, "special" and within twenty-four hours after its issue shall notify the Supervisor of Permits in writing of the issuance thereof, giving all the information required to be written on prescriptions by Section 11, without disclosing the nature of the patient's ailment; but in no case for a quantity in excess of that required to meet such needs for a period of ninety days.

No person shall by any statement or representation that he knows is false, or could by reasonable diligence ascertain to be false, induce any physician to prescribe liquor for medicinal use when there is no medicinal use for such liquor or in excess of the amount of medicinal liquor needed.

Only a physician holding a permit to prescribe liquor may issue a prescription therefor. No physician shall prescribe liquor unless after a careful physical examination of the person for whose use such prescription is sought, or if such examination is found impracticable, then upon the best information obtainable, he in good faith believes that the use of spirituous or vinous liquor as a medicine by such person is necessary and will afford relief to him from some known ailment. It is suggested that in determining the quantity to be prescribed, the physician inquire of the patient concerning the quantity of liquor, if any, recently prescribed for the patient by other physicians.

Until such time, not earlier than Jan. 1, 1934, as the stamps mentioned in Sec. 2 of the Act of March 31, 1933, are printed and furnished to physicians, all duly qualified physicians holding permits and authorized to prescribe liquor will be furnished a sufficient number of prescription blanks, Form 1403 in serially numbered books of 100 original and 100 duplicate blanks each, to meet their requirements. These blanks may be procured free of cost by the physician from the Supervisor of Permits.

The physician may issue prescriptions, as herein provided, using each blank in the book, those on which the word "Duplicate" is printed as well as those marked "Original", as an original prescription. This will enable the physician to write 200 original prescriptions from each such book of blanks. Attached stubs must be filled in by the physician at the time the prescription is written. Such stubs shall be immediately forwarded by the physician to the Supervisor of Permits when the prescription blanks have been exhausted. The physician shall write on each prescription, including emergency prescriptions under Sec. 12 the kind of liquor prescribed, the frequency of dose, the period of time for which prescribed, the patient's name and address, the physician's signature and his permit number and address. The issuance in duplicate of prescriptions on Form 1403 shall be discontinued.

In case of loss, theft or other condition necessitating the use of a blank form of prescription other than Form 1403, the physician may write an emergency prescription on an unofficial blank. Such emergency prescription must be written in duplicate the duplicate being in lieu of the stub record of the prescriptions that would have been written on Form 1403. Such duplicate prescription must be immediately forwarded by the physician to the Supervisor of Permits.

Before completely exhausting the prescription Forms 1403 in the book on hand, the physician may apply to the Supervisor of Permits for a new book. The cover on the back of the prescription book must be detached and used in applying for a new book of Form 1403 prescription blanks.

All printed instructions and notices appearing on the cover of the prescription book and on the reverse sides of all prescription blanks, Form 1403, may be ignored wherever in conflict with these regulations.

A record shall be kept by every physician who issues a prescription for spirituous or vinous liquor, in a bound book alphabetically arranged according to surnames of patients, showing the date of issue, the amount of spirituous or vinous liquor prescribed, to whom prescribed, the period for which prescribed, the purpose or ailment for which it is to be used,

and directions for use, stating the amount and frequency of the dose. The record book herein required to be kept shall be procured by the physician through commercial channels, and will not be printed or furnished by the Government.

No physician shall be called upon to file any statement of the ailment for which spirituous or vinous liquor is prescribed, in the Department of Justice or Department of the Treasury, or any other office of the Government, or to keep his records in such a way as to lead to the disclosure of any such ailment except when lawfully required in the following manner: Where disclosure of the ailment may be required in any court of equity reviewing the action of the Commissioner or the Supervisor of Permits, of the Bureau of Industrial Alcohol, in the revocation of a physician's permit; or where disclosure as to the ailment of the patient is required by any duly qualified person engaged in the execution or enforcement of the National Prohibition Act, or any Act supplementary thereto; but no such person shall require the physician to disclose the ailment except where he shall first obtain written specific authorization so to do from his superior officer.

THE RIGHTS OF OSTEOPATHS

A civil suit involving the right of an osteopath to practice medicine and surgery in West Virginia on an equal basis with the regular medical profession has been instituted in Mason County and this question will probably be settled in the near future. Since the passage of the present Osteopath law in 1923, there has been a great deal of discussion throughout the state as to whether the 1923 act intended to bestow the same rights upon osteopaths that are enjoyed by trained doctors of medicine.

The Mason County case grew out of an altercation between R. W. Eshenaur, Point Pleasant Osteopath, and the Mason County Court, involving an alleged contract to treat the poor and indigent. Eshenaur has entered suit against the Mason County Court to compel the court to award him the contract on the ground that he was the low bidder. Attorneys for the Mason County court have recently submitted a statement of the case to the Journal, which we publish herewith:

The suit is predicated upon an alleged contract entered into between the County Court and R. W. Eshenaur whereby the Court is alleged to have awarded to R. W. Eshenaur the poor practice for certain districts as well as the infirmary and County jail. Sealed proposals for the contract were received in accordance with the law and opened at a designated time upon which occasion it appeared that R. W. Eshenaur was the lowest bidder in the particular instance. The County Court by appropriate order formally awarded the contract but later rescinded its action upon the advice of the Prosecuting Attorney. This action was taken because R. W. Eshenaur had only a license to practice as an osteopathic physician and surgeon. The Prosecuting Attorney advised the County Court that within the perview of the statute a contract for this particular practice could only be awarded to a regular physician and surgeon and that an osteopathic physician and surgeon was not entitled to share in this work.

The contract as previously stated was regularly rescinded and at the expiration of the one year embraced in the rescinded contract, R. W. Eshenaur instituted the present suit for the purpose of recovering the amount specified in his original contract.

In this case the question squarely arises as to whether or not an osteopathic physician and surgeon actually has the same rights and privileges as licensees from other schools of medicine.

A demurrer has been filed to the declaration raising, as a matter of law, the question as to what the rights of an osteopathic physician and surgeon are. This demurrer was argued before the Judge of the Circuit Court of Mason County on the afternoon of May 12, 1933, after an agreement entered into at that time that a further written memorandum of authorities would be filed by each party. This memorandum is now under preparation.

Counsel on behalf of the defendant, brushing aside all other technicalities, asserted that an osteopathic physician and surgeon was not entitled to share in this type of work, because the section of the Code under which the County Court renders this service to the poor of the County was enacted many years ago before the osteopathic school of medicine made its appearance. Certainly at that time only the licensees of regular schools of medicine were recognized.

Counsel for Mr. Eshenaur specifically cited that the provisions of the act of 1923 providing that

osteopathic physicians and surgeons should have the same rights and privileges as enjoyed by practitioners of other schools of medicine. It was apparent from the position taken that Mr. Eshenaur contends that an osteopathic physician and surgeon has the right to render exactly the same kind of professional service as those practicing in other schools of medicine.

Counsel for the County Court met this proposition with the assertion that the Act of 1923 was to be read in light of the other provisions of the Code and when so considered there could be no pretension that osteopathic physicians and surgeons could usurp the privileges and prerogatives of the regular members of the medical profession. The Counsel for the County Court further contended that if the wording of the statute did protray this meaning then the statute itself was unconstitutional as being an unreasonable classification.

From the constitutional standpoint counsel stated that the legislature was clothed with the authority to prescribe rules and regulations for the practice of any profession but that these rules and regulations must be reasonable. Upon this basis it was stated that the Code provides for a higher standard of training and educational qualification for the regular physician and surgeon than it does for an osteopathic physician and surgeon. It would therefore be unreasonable to exact a high standard of the one and low standard of the other and then immediately clothe the low standard with the same rights and privileges as possessed by the high.

This civil suit is preferable by far to any other kind of proceeding or criminal action for the purpose of testing out this particular point. If recourse were had to an indictment, the whole matter would have to be decided "beyond a reasonable doubt." Further in the event of an adverse decision appeal to the Supreme Court would be impossible. In the present case the whole matter is decided as an ordinary civil action by a preponderance of the evidence and the right of appeal wuold unquestionably lie regardless of the outcome in the lower court. It seems that this present suit furnishes the most satisfactory means of testing this law.

Mr. Woodward of the American Medical Association has conferred with counsel for the County Court and unqualifiedly expressed his approval as to the present suit being eminently preferrable to any other method in determining this particular question.

FROM OTHER JOURNALS

FREE MEDICAL CARE

The present crowding of hospitals and dispensaries where the profession renders service gratis only serves to bring into the limelight the whole subject of who should and who should not be given free professional service. It is to be hoped that the present economic upheavel will result in a more fair adjustment of a responsibility which is at present a tremendous burden on the profession.

Perhaps Mencken is right when he says that the medical profession has allowed itself to be imposed upon by the extension of free medical service to more than the indigent.

With the establishment of hospitals and dispensaries for the care of the indigent, which after all is an outgrowth of Christian civilization, the medical profession was willing as a group to render free professional service as a contribution to local charity. The comparatively recent extension of care by such institutions to patients not strictly penniless but able to pay something to hospital or dispensary has been a departure from the original idea... The group of patients receiving free professional service has thus been enlarged due doubtless to the easy-going attitude of the profession.

Perhaps Mencken is right when he says: "There is, as a matter of fact, no plausible reason for arguing, as uplifters always do, that the privilege of first-rate medical care is a right that every free-born American acquires at birth, regardless of his merits or his means."

As far as medical service is concerned there seems to have developed three classes of patients, as pointed out by Dr. A. F. Branton in an article which appears in this number of *Minnesota Medicine*. There is the class that is self sufficient in every way including medical care; a class that is dependent on charity for everything—medical care included; and a third class that seems to be self-supporting except for medical care. Should this third class be recognized?

In normal times only a small percentage of the population can be classed as indigent. Now, of course, most of the unemployed have been added to the group. The vast majority of the population belong to the comparatively small income group, which constitutes the main clientele of the medical profession. It is only when a prolonged or serious illness or disability is experienced by individuals in

this group that the cost is unbearable, and this occurs in a comparatively small percentage of this large group. It is this small percentage that under such unfortunate circumstances might be termed indigent as far as medical service alone is concerned. Here then is the main argument for sickness insurance for those with small incomes.

How should such sickness insurance be provided? It is being written to some extent at the present time with cash benefits provided in case of sickness. This assists the beneficiary to meet the expense of private care. It does not cover the complete costs of sickness, nor should it. To do so would only place a premium on slow convalescence. Insurance to cover all the costs of complete medical, dental, hospital and nursing care, it has been shown, would be too expensive from an insurance standpoint, too open to abuse, and simply too idealistic.

The medical profession in general approves of sickness insurance which enables the sick individual to provide for his own private care. It unalterably opposes all proposals whereby the insurance company provides medical care through physicians employed by them. This virtually amounts to insurance companies entering the practice of medicine.

Perhaps, too, Mencken is right is accusing the medical profession of not offering enough resistance to the evil tendency of medical care to become more and more expensive, and especially hospital care.

Certain it is that the cost of medical care has increased considerably in recent years. Part of this increase has been the necessary accompaniment of scientific advance. Extravagance has been in evidence, however, not only in the uncontrolled construction of hospitals that were not needed, but in the construction of hospitals fit for kings rather than individuals with modest incomes. Some patients simply add to the cost of hospital care by demanding needless luxuries in the way of hospital accommodations and nursing care. The profession, too, has been to some extent to blame in their insistence on the need of hospital care when it has not been necessary. All this needless adding to the cost of sickness simply increases the number of those who cannot meet the expense of private medical care.

There are certain very definite indications for a correction of present trends in medical practice. If the present economic debacle by serving to accentuate these evils results in their correction it shall have served a useful purpose.

The profession fought seemingly in vain against the inexcusable extension of Veteran hospital care to include non-service disabilities. It seems as though the crisis will likely correct this unwarranted invasion of private practice and limit hospital care to service cases and possibly also to the indigent ex-soldier.

Medical and nursing schools have been turning out graduates in excess of actual needs. The depression has brought this to the fore and concerted action should be taken to reduce enrollments.

Another evil which should be aired as a result of the times is the extension of benefit associations to provide medical and hospital care to those outside the association. This extension results in underbidding of private hospitals and physicians at the expense of members of such benefit associations.

Retrenchment in the use of hospitals, from the standpoint of construction, equipment and utilization, is in order.

And finally, the limitation of free medical care furnished by city, county and state institutions to the indigent alone, whether the doctors in attendance are paid or not, should be strictly adhered to.

—*Minnesota Medicine.*

MODERN MEDICAL PRACTICE

The past three decades of drastic change in commercial life is seeping into the realm of the arts and the professions. Now this change is pivoted upon that so-called social consciousness that is the latest human expression of a mortal attempt to bring to a more gracious level the glaring inequalities of civilized existence and while the intent is excellent the method in the main would seem open to criticism, though worthy of study, compilation and possible adaptation.

Quantity production, standardization, specialization with all its lack of individual relationships and a general substitution of mass administration is the keynote of this new distribution. The individual and his private woes are not at this moment the especial object of community consideration. The world is growing too big. The barter and exchange of international markets have forced these new concepts upon business heads. Unfortunately this has not always eventuated in cases of the necessary arts and the vital professions such for example as the ethical practice of medicine. As with others in the same classification of human endeavor the medical profession is still trying to mix oil with water. In other words the medical profession continues to try to measure the protean ramifications of the current

economic system by the yardstick of an ante-bellum, early American idea that is at once all individualistic and forsworn to the best ends and ambitions of individualism.

While the world is still divided upon the best systems for making conform the individual exigencies of human personal life, as exemplified in nature's processes and performances, to the set schedules of a machine age in an era where to date the groups eschewing classification are machine control of the weather, the corn crop and animal and human processes of life, death and propagation, the medical profession almost more than any other is face to face with the necessity for doing practically this thing. The famous old family physician finds himself put to it to continue with his work with the former skill and success under circumstances that literally change him from an essential part of his patients' most intimate lives into a non-essential and extraneous automaton.

Instead of a link between the here and the hereafter, who was a tower of strength, and a fountain of consolation, the modern complexities of medical practice and the pressure of modern economics are substituting for the old fashioned family physician a system that brings out perfect machinery and perfect routine whether it produces perfect medicine and perfect practitioners or not.

And right here is the gist of the problem to be studied by the man who would make the practice of medicine a paternalistic matter.

The answer would seem to lie in the successful divination as to exactly to what degree the functions of nature can be reduced to the lowest common denominator of the card index.

And in this classification of the problems of nature must be included those perplexities of soul, body, and individual self that can be solved, adjusted and eased only by the application and analysis of another individual human mind. So far nobody has succeeded in endowing even the cleverest of machines or of robots with anything anywhere approaching the human mind. As in the ages past the psyche would seem to evade the machinist's union.

However there is no begging the question that some sort of bargain must be struck between modern economics, modern medical practice and modern deficiencies and efficiencies. State medicine, state politics, state taxation, or state statutes are not the panacea. Modern magic is merely good hard work and virile attacks on vital problems, not clever evasions. What state medicine means to the welfare of the individual as well as to community health and to the practice of medicine is an urgent issue to which the individual physician as well as organized medicine must give able consideration. Every man who is honest with himself and with the obligations of his profession realizes if he stops to think that there threatens a most unfortunate parting of the ways with a chasm that can never be rebridged unless the medical profession itself takes a hand in the situation.

No less a man that Dr. J. Whitridge Williams, Dean of Johns Hopkins Medical School, remarks "that the time has come when a halt will have to be called on many members of the medical profession who charge all the traffic will bear, may be accepted as evidence of the fact that at bottom the instances of which he complains are but sporadic attempts on the part of medical men to equalize their charges with costs so as to provide a decent return."

Though undoubtedly an honest canvass of the medical profession would show that the per capita wealth is less than in any similar walk of life, yet of course the fraternity is not absolutely free from men whose creed is "Get the cash."

To protect the profession against inner as well as outer destruction the best weapon now at hand would seem to be organization of the profession in an organization that will stick. Here is the elemental angle of failure to progress in line with tendencies of the times, where the medical profession is concerned, except with the great specialists and laboratory men. Business organizations have become just what the phrase implies. A business man knows to a penny what every item he has for sale costs to secure or to produce. The private practitioner is without such knowledge to protect himself when it comes to a sale of his skill and art. The great laboratory, or other institutional adjunct of modern medical practice, is better equipped in this regard. But—after these have charged off their overhead they too, in the greater number of instances are in a position to prove that they too are of that class that fail to deem "the laborer is worthy of his hire." Actual figures show that many of the "big men" actually earn less than mere executives in much less skilled work, as an evidence of the lay idea of the situation. Under date of July 16, 1930, the *Saturday Evening Post* made this comment upon the medical economic crisis:

"It is unfortunately true that occasionally a medical or surgical man in a large city, together with the laboratory men and specialists who assist him in making his diagnoses, charges whatever he dares; but it should be taken into account that the great majority of family physicians regard such men with contempt and do everything in their power to prevent guileless patients who appraise the skill of service solely by its cost, from falling into the clutches of these dollar doctors.

"No action charging rapacity can lie against the great mass of family practitioners. As a rule they are overworked and underpaid, and in most cases they would be far richer men if their fees were in closer accord with the services they render.

"For many years the overhead costs of medical service have been steadily rising. The patient pays more and gets more. The whole tendency of modern medicine is to lean more and more heavily upon collateral sciences, and to invoke their aid in substituting moral certainties for the exercise of unassisted judgment, which though frequently highly skilled, was often unsatisfactory. The common use of the x-ray is the best known illustration of this tendency, though dozens of others might be named.

"Most physicians are quite ready to acknowledge that they charge their rich patients more than their poor ones. It is stated on high medical authority that the wealthiest fifth of the average community indirectly pays most of the doctors' bills of the poorest two-fifths. Persons in the intermediate layer pay just about what they should. Until the practice of medicine is taken over by the state there are only two other methods that can be employed: First, to charge neither rich nor poor more than a nominal fee; and second, to serve only the rich and well-to-do and let the poor shift for themselves. The former course is closed to the doctors by the first law of nature; the second by the dictates of humanity."

From a medical viewpoint it is perhaps best to quote here a contemporary's comment upon the statements of the *Post*—

" 'Until the practice of medicine is taken over by the state there are only two other methods that can be employed', and neither is practical or possible. Is it possible that the trend toward specialism, whose high purpose is to 'substitute moral certainties for the exercise of unassisted judgment', would disappear under state medicine, or that those economic laws which admittedly are forcing the medical practitioner to specialize would become one whit more benign under governmental operation? Would capital invested in plant, laboratory, and library be any the less entitled to earn a reasonable return under state medicine than under private ownership? Would professional skill be less costly or less valuable if compensated by taxation?"

Or, in other words is medicine going to continue to be medicine and the master human science, or is it so commercialized into an adjunct of the chain system of the "five and ten?"

If organized medicine doesn't speak up soon, organized politics will be found to have already "spoken up" in its stead.

—*Illinois Medical Journal.*

EMOTIONAL CONFLICT

"Every one is familiar with, and wary of, the chronic sufferers who have been ill for many years and who give a detailed account of their symptoms on every possible occasion," Dr. Edward Weiss begins his article, "The Emotional Life: Its Relation to Chronic Illness," appearing in the June issue of *Hygeia*, the Health Magazine.

These diseases, coming in fashion waves, have been chornic appendicitis, floating kidneys, the lazy colon and auto-intoxication. These diseases do not merely affect the idle rich; cases are just as common in hospital clinics. It is incorrect to believe that people really consciously enjoy these incapacitating illnesses, that the ailments are imaginary or the result of pure deviltry or malingering.

"A great many brave and worthwhile persons suffer illnesses which are not due to physical causes, and no one but the immediate members of their families and sometimes only their physicians know the extent of their sufferings or how courageously they carry on in spite of them," Dr. Weiss continues.

It is not hard work but emotional conflict that causes the disturbance. Problems regarding marriage in many cases cause conflict. The best practitioner will definitely consider the emotional life of his patient. As Hawthorne, writing "The Scarlet Letter," said, "A bodily disease which we often think of as a thing apart and separate may, after all, be but a symptom of an illness in the spiritual part of our nature."

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THE BLIND AND VISUALLY HANDICAPPED IN WEST VIRGINIA*

By J. E. BLAYDES, M. D., F. A. C. S.
Bluefield, W. Va.

WEST VIRGINIA is trailing far behind many other states in caring for its blind and visually handicapped children. So little have we done for these unfortunates that in formulating any program in their behalf we would be starting almost anew.

Numerous states have official commissions for the blind and the visually handicapped, whose work is aided and supplemented by official departments of education and social welfare and by non-official welfare agencies. Schools are provided for the blind, and sight-saving classes for the visually handicapped. Official and non-official organizations perform an important duty in the marketing of products made by the blind, and in finding employment for graduates of the schools for the blind. They strive to keep the public informed of the ability and accomplishments of the blind through the press and by posters, cinemas, lectures and exhibits.

Most important of all, numerous states have recognized the value of examination and medical and surgical treatment of the blind; and also of educating parents in the prevention and cure, as well as a correction of any impairment which may happen to the eyes of their children.

It is true that the State Health Department of West Virginia has rendered some valuable service, but owing to their decreased budget, this assistance has been limited and, with the exception of a very few other instances, all that the state has done is to establish two schools for the blind; one for white students, situated at Romney; the other for negroes, at Institute. We have not even a census of the blind and semi-sighted of the state. It is estimated, however, that the number thus afflicted is approximately 3,500. Of these according to an estimate by Mrs. Winifred Hathaway, associate director of the National Society for the Prevention of Blindness, at least 424 are of school age. However, she says the total is probably closer to 850.

Yet the average enrollment at the Romney School for the past ten years has been but 106.8, and it is only through the ceaseless and diligent efforts of Mr. Parley DeBerry, superintendent of the school, that the number of students has reached the present total. When Mr. DeBerry returned to the school as its administrative head in 1923, the enrollment for the previous year had been only 60.

*Report for the West Virginia White House Conference.

Since his return, the student body has increased steadily until, for the school year 1932-1933, it has reached 115. For these encouraging results, Mr. DeBerry deserves to be commended.

The average attendance at the colored school at Institute has been 22 since opening of the school in 1926, the ages of the students ranging from 8 to 26. The school superintendent estimates there are between 125 and 150 blind negroes in the State, one-third of these having been born blind, and two-thirds having lost their sight through injury.

The enrollment of these two schools discloses how lamentably indifferent and haphazard is the state system of caring for its blind and visually handicapped citizens.

I cannot say too much in praise of these two schools, and the men charged with the duty of conducting them. I know from experience that the executives and faculties of the schools are sincerely interested in serving the visually afflicted; that they are doing their utmost to educate and otherwise improve the well-being of the blind, and are obtaining as good results as possible. Their only regret is that under existing circumstances they are unable to do more. It is obvious that through lack of facilities they are unable to reach a large percentage of those who need help and training, and are inadequately assisting those they are able to reach.

With no census for guidance, there can be no systematic enrollment of students. Through the hit-or-miss methods, which must of necessity be used, many who should be in the school for the blind are overlooked. Enrollment is made still more difficult because of the remoteness of many communities of the state, and by the hostility of parents who, through no fault of theirs, are primitive and ignorant.

At the two schools, there is no provision for even a cursory examination of the eyes of the students, much less for medical and surgical treatment of those who thus might be helped. There is no system of follow-up-work, nor is there any plan of helping the students after they have been graduated. The state makes it compulsory for the blind children to go to school, spends money upon their education, and then casts them into a highly competitive society to shift for themselves as best they can.

It should be the responsibility of the state not only to educate and train its blind, but also to guide them when they leave the protection of the schools. There are no agencies in the state, official or otherwise, to assist the graduates of the schools in obtaining employment, in marketing the articles they are trained to make, or in educating the public that the blind can be of use.

The placement of graduates of the schools for the blind in gainful occupation is one of the most pressing needs in West Virginia. Superintendents DeBerry and Hill, Mr. W. S. Dodrill, Mr. R. M. Golladay, principal of the Romney school, Mr. C. C. Cerone, a blind teacher in the school, and graduates themselves are all in accord that something must be done to assist the blind in finding employment.

It is commonly known that the blind are extremely sensitive and easily discouraged. Left alone, as they are at present, and finding it difficult to compete on anything approaching equal terms with the sighted, they descend to begging in the streets or return to their homes, sometimes filthy and squalid shacks, there to lead the shiftless, aimless life of the pauper, marry and bring sightless or visually defective children into the world.

I should like to digress for a moment to say that nowhere in the entire country is there an institution of higher learning for the blind, and it is my earnest hope that sometime in the near future, the Federal Government will erect, maintain and support a college wherein the blind may be educated in the arts and sciences.

The state has made no provision at all for sight-saving classes; the two schools are concerned only with the blind. At this juncture, we should differentiate betwen the two general classifications. By the blind is meant persons who are totally without sight; by the visually handicapped is meant persons whose

vision ranges from 20/70 to 20/200, or those whose vision is so defective they cannot or should not make use of ordinary print.

The first step in any comprehensive plan of fulfilling our obligation to the blind and semi-sighted should be the creation of a state commission for the blind. The commission should consist of at least three members, one of whom should be from the blind, one other of whom should be thoroughly experienced in work among the blind, and the third an individual who has always been interested in such very meritorious service.

It is advisable that one of the membership should be sightless, because the blind have a thorough understanding of the people who are similarly handicapped, of their problems, ambitions, capabilities and personalities. The commission should be non-political and thus not subject to changes in the state government. This should hold true also of the administrations of the schools for the blind. A more permanent program can be promulgated and more beneficial results can be obtained if there is assurance that the personnel will not be ousted and policies and practices altered or discarded with every change in the state administration at Charleston.

When organized, this commission for the blind should map out its program in accordance with suggestions to be made at this conference, and with the best practices obtaining in other states. Since we are laggard in recognizing our responsibility to the blind and visually handicapped, we can benefit by what has been done and is being done elsewhere; we do not have to go through the process of trial and error. We can profit, also, by the counsel and experience of non-official national and state organizations for the blind.

I am not so optimistic as to believe we can persuade the state legislature immediately to grant us all that we deem necessary or desirable. But if we can secure the creation of a commission for the blind and an appropriation to start its functioning, we shall be well on the way toward our goal. With the two schools already established as a nucleus or starting point, the commission can build up its complete program slowly, but each successive step should be taken with the entire program constantly in mind so that all its parts will be cöordinated and correlated.

At the beginning, the commission would be largely dependent, no doubt, for assistance upon private welfare societies in the counties of the state, and upon any other group or organization interested in sociological and educational problems. At all times, it should work harmoniously with the State Board of Health, the Public Health Council, and the Department of Education and, even after it has become solidly established, encourage the cöoperation of private welfare clubs and groups, because their aid is not only highly desirable but, on account of the scope of the work, necessary and almost indispensable.

The first step of the commission should be the taking of a census of all the blind and visually handicapped in the state. For this work, only interested persons of tact, resourcefulness and courage should be selected, for enumerating the blind and visually handicapped in this state is a more difficult task than might be apparent.

As previously stated, many communities of the state are not easily accessible, and not a few of our people are backward, shiftless and antagonistic. They cannot be coerced into giving desired information but, like children, they can be led into cöoperating with those vested with authority. This has been the experience of Mr. W. S. Dodrill, an instructor in the school at Romney, who has travelled more than 30,000 miles in transporting students. On a few occasions, Mr. Dodrill actually risked his life in going to the homes of the blind children, so hostile were the parents.

The census enumerators should also be trained in giving simple, but effective, tests in order to list and properly classify all the blind and semi-sighted in the state. It should be stressed, however, that a census is of no value unless, or until, we are prepared to put to use the information it contains.

The primary and most important purpose of the commission should be the prevention,

correction and cure of defects and diseases of the eye. There is much to be accomplished in this state in prevention and rehabilitation. To illustrate the point, I shall cite my personal experience at the Romney school.

Late in 1930, permission was obtained to examine the students in the school. Of the 114 students then enrolled, I found that surgery would be helpful to 27. I agreed to do the surgical work without compensation of any kind, if money would be provided for the transportation to and hospitalization of the students in St. Luke's Hospital in Bluefield. Although only about $3,000 was required, we ran into many difficulties. We tried several sources, official and non-official, without results. Finally, however, Mr. DeBerry, undaunted by previous failures, laid the problem before the Lions Club at Romney and to their honor and glory be it recorded that the Lions Clubs of the entire state quickly and generously provided the necessary $3,000.

The operations were started during the summer vacation period of 1931, with Mr. Dodrill transporting the children from their homes to Bluefield. Of the 27 children who received surgical treatment, 9 entered public school with normal sight, 2 were not benefitted, and the other 16 received vision varying in degree from 20/50 to 20/200, or enough vision to go about like normal persons and to earn an independent living.

Looking upon this narrowly and from the economic point of view only, we can see that the entrance of the 9 children in the public schools saved the state $3,600 per annum, for Mr. DeBerry has estimated that the cost of training the blind at the Romney school is $400.00 a year per student. This saving for one year, you will observe, exceeded the total cost of transporting and hospitalizing the entire group of students, and yet we had to depend upon the Lions Clubs, a private organization, to provide the funds.

According to Mr. DeBerry's calculations, in which it is pointed out that the average student attends the Romney school for six years, the state saved, through the restoration or normal sight to the 9 students, a total of $21,600. This sum can be considered the minimum saving, for it does not take into account the financial assistance that must be given blind persons outside the school by the communities in which they reside for life. Taking into consideration the 16 students who received from 20/50 to 20/200 vision, while they are continuing their education at the Romney school, yet when they have finished the course of study there, instead of having to return to their homes, there to be a financial burden on the community for the remainder of their lives, these students have enough vision to go out and earn their own living. It is my estimate that such community cost is, at least, $600.00 a year for each blind person.

Therefore, it will be observed that the restoration of sight to the blind results in a very substantial monetary saving to the state and its communities. None of this, of course, takes into consideration the incalcuable social value of vision from the standpoint of both society and the individual students themselves.

Please note: If so much could be accomplished without state aid or official backing of any kind from the legislature, how much more could be achieved with governmental support?

More of the students could have been helped had they received proper attention earlier in life. This is true of many of the other blind and visually handicapped of the state, about 20% of whom, I do not doubt, could be helped even now.

To indicate what might be accomplished here by medical and surgical treatment and educational measures, I should like to call your attention to Wayne county where there are about 80 blind persons, numbers of whom are inter-related. These persons intermarry, propagate and pass on their eye diseases to their offspring.

Among the eye diseases which takes its toll in West Virginia is trachoma. For many years, trachoma was a serious epidemic among the mountaineers of this state and, indeed, it still is. The United States Public Health Service

cöoperated with the West Virginia State Board of Health in trachoma eradication work from October, 1915, to September, 1918. During that time, a small field hospital was maintained at Welch where, in the period of 35 months, 655 cases of trachoma were hospitalized. Of these, 218 had corneal opacities, 5 were found entirely blind, 8 were blind in one eye and 63 were found with entropions needing repair. Most of the patients came from Cabell, Kanawha, Lincoln, Logan, McDowell, Mingo, Raleigh, Roane, Wayne and Wyoming counties.

Dr. C. E. Rice, surgeon of the United States Public Health Service who is now engaged in trachoma work at Rolla, Missouri, has informed me that so many severe cases of trachoma from West Virginia are being received at the Trachoma Hospital in Richmond, Kentucky, that he is convinced that the disease must still be highly prevalent in this state. Yet nothing has been done to check trachoma here since 1918. Dr. Rice states that "if the percentage runs in West Virginia as it does in Kentucky and Missouri, about 14 percent of all trachoma cases found would have vision of 20 200 or less in both eyes." In other words, they would be classed as visually handicapped or worse.

Congenital cataracts and strabismus are other ailments of the eye that are correctable. There is no excuse for the loss of vision because of strabismus; even a lay person can recognize a cross-eye. But what is not realized, even by some physicians, is that a squint that is not corrected before the age of 7 is almost certain to result in the permanent loss of sight in the turning eye.

To be certain that defects and diseases of the eye that can be corrected, cured or alleviated are not neglected, it should be the duty of the commission to provide means for the examination of students as they enroll at the schools for the blind, and of semi-sighted children of pre-school age at convenient centers, or in their homes. Cases requiring surgical or medical attention should be carefully catalogued and followed up, the services of nurses trained in eye work being essential in this program.

It is a much discussed and still unsettled question as to where the duty of physicians ends and of the state begins, but I think it safe to say that in the beginning and until the state provided sufficient funds, accredited and interested ophthalmologists would be willing to make examinations and provide treatment gratuitously and to cöoperate at all times with the commission in other ways, such as conducting clinics and addressing public meetings for educational purposes. It is too much of an encroachment, however, to expect them and other practitioners to give extensive treatments or perform surgical operations without remuneration over a long period of time.

Examination of the blind and visually handicapped should not end with the eyes; a complete physical examination is desirable and often necessary, for a visually afflicted child, especially if he has received no attention during his pre-school years, is likely to need other treatment. Many of the blind and semi-sighted children of this state are improperly or inadequately nourished and their bodies are likely to be undeveloped because of lack of exercise. For this reason, schools for the blind and classes for the visually handicapped must provide recreational exercise.

It should be the duty of the commission, also to provide training that will enable blind and semi-sighted children of pre-school age to lead normal lives. Children thus afflicted are inclined to shun the company of playmates. They come to believe that, because of their affliction, they are freaks or oddities. Thus they are liable to develop psychoses that will prove harmful in later life and that will make more difficult their subsequent training. They must be taught to play like other children, to do things for themselves, and to mingle with sighted children as far as feasible.

In the prevention of eye defects and ailments, there is much to be accomplished. The key to prevention is education and to educate the backward adults of the state is a task of

no small proportions. Yet it can and must be done if the state is to do its duty fully.

When it somes to the elimination of preventable accidents to the eye, education is our only ally. Parents must be instructed to guard against the use by their children of dangerous toys, such as bows and arrows, air rifles and sharp-edged playthings; children should be taught the proper use of common household utensils, such as can openers, scissors and knives. We are all familiar with the appalling damage that used to be done by explosives at Fourth of July. While these accidents have been steadily declining, they are still much too frequent. Therefore, playing with firecrackers and other explosives should be discouraged. And at all times, it must be remembered that an injured eye should receive immediate attention to guard against sympathetic ophthalmia.

Workers who are constantly exposed to the danger of eye injuries must be educated into the use of goggles. These protectors have saved many an eye, even when the face has been badly scarred. Yet few corporations provide goggles for their workers or insist upon their use when they do. And, since workers are inclined to follow the example of their superiors, it should be mandatory that while they are in the department where the eye hazards exist all persons wear goggles, from the company president to the office boy.

In the plants of the Pullman Company, the goggle rule applies to everyone and the company's record of eye injuries is astonishingly clean. This company's splendid record, indeed, strikingly illustrates how important is the use of goggles. These safeguards save not only eyes but compensation that would have to be paid by the company or insurance concerns in case of injury. It should be the duty of our state commission to demonstrate these facts to corporations so that they can see graphically how they and insurance companies can benefit, as well as the workers, through the use of goggles.

In several cases, I have observed that when a worker suffers general and severe injuries, injury to his eyes is overlooked so that when he recovers from his bodily hurts he is faced with blindness. I should like to urge, therefore, that the compensation commissioner be on guard for this class of cases and to investigate, whenever there is such apparent negligence, why the eye injuries were not properly cared for.

In the conservation of vision, it is necessary to stress the importance of proper illumination, the tiring effects of glare, the need of brief but periodic rest from concentrated reading and the strain resulting from reading in trains or other moving vehicles.

The curriculum of schools for the blind presents a problem that is very difficult of solution. This difficulty is aggravated by the changes that have taken place in our industrial methods. You are all aware of the rapid and almost complete change from hand production to machine production; yet the blind must depend, as they are presently trained, upon hand production. Cognizant of our changing trends, schools for the blind are somewhat in a quandrary as to what vocations to teach. In several states, however, the usual instruction in piano tuning, broom and mop making, rug weaving, chair bottoming, basketry and similar crafts is now augmented.

In New York and Missouri, for instance, the blind are trained in factory and office work, the management of news and confectionery stands, salesmanship, insurance underwriting and the management of small businesses. In Missouri, the blind are profitably engaged in more than 120 different classes of occupation, ranging from wood cutting to the ministry.

At present, there is only one shop or factory in the entire state that employs blind persons. That is the Union Mission, Inc., of Charleston. Mr. Pat B. Withrow, its superintendent, is to be commended for employing the blind, but unfortunately he is able to employ a scant half dozen.

Of course, it would be one of the duties of the contemplated State Commission to obtain and provide employment for the blind, but

pending the creation of such a body some other way must be discovered. For the present, the facilities of an appropriation for the blind schools might be increased to accomplish this end. It has also been suggested by executives and teachers of the Romney school that the state lend to capable graduates the small amount of capital required to set them up in business. Materials could be supplied them at wholesale prices. Their products possibly could be purchased by the state and municipal governments in quantities sufficient to fill their actual need of such articles. Since the Lions International is dedicated to service for the blind, members of the Lions Clubs in this state could be of material help by employing, whenever feasible, graduates of the blind school. This is one of the many ways in which the Lions Clubs in Missouri are assisting their state commission.

News and confectionery stands in courthouses and other government buildings could be leased to the graduates. Materials and tools might be furnished those who work at home, the state assisting in the marketing of the finished products. Shops for the blind, maintained and supervised by the state, are much to be desired, the workers to be paid for their labor in accordance with the prevailing union wage scale. These suggestions will bring to mind other ways in which the blind could be assisted in getting a start.

Now we must give consideration to the semi-sighted. Because of their seriously defective vision, these children cannot be educated either profitably or adequately without specialized teaching and equipment. They should not be educated in schools for the blind, nor wholly in classes for those with normal vision, for the three classifications are distinct and their requirements different. For the visually handicapped, the approach is visual and auditory; for the blind, it is tactile and auditory.

In other states, sight-saving classes are conducted in the public schools. The visually handicapped are provided with special sight-saving equipment, such as books with large type and pens and pencils with broad points.

When there is no text available with large type, the teacher reads from the regulation text. The pupils are kept apace with those in the corresponding normal classes, for they attend the special classes only when it is necessary to use their eyes in reading or studying maps. For recitation, they return to the normal classrooms. It is essential that this procedure be followed so that the semi-sighted can mingle as much as possible with the children of normal vision. Thus morbid introspection is forestalled.

At the start, sight-saving classes could be organized in the public schools of our largest cities, and in the small centers as greater state aid became available. According to the most recent statistics of the National Society for the Prevention of Blindness, there would be approximately 30 visually handicapped children in Huntington; 27 in Charleston; 14 in Wheeling; 15 in Parkersburg; 10 in Morgantown; and 12 in Bluefield.

The county class is being tested in a number of places where either the county seat or some other central point having good transportation facilities, and a consolidated school is selected and a sight-saving class established in this school. For the children in rural districts who cannot be accommodated by either of these methods, there are other possibilities.

Occasionally a child is boarded in a city having such a class, but more frequently sight-saving material is supplied him in the rural school which he attends and the teacher is assisted in making use of this material through correspondence. As this is largely an educational problem, the commission for the blind would necessarily work in close association with the Department of Education, but it would devolve upon the commission to enumerate the semi-sighted, to train the teachers, and to supply the sight-saving material required. Since education is compulsory, it should be made available in an assimilable from. The state, therefore, should contribute its share of the expense for this work.

There are several ways in which the state may help pay the expense of educating the visually handicapped child. It may be done as a per capita appropriation, as in Minnesota, Ohio and other states; or as a sum apportioned by the legislature, as in Massachusetts; or as a part of the teachers' salaries, as in New Jersey; or by the equalization plan, as in New York. Under the equalization method, the same amount is contributed by the state for ten pupils in a sight-saving class as is contributed for twenty-seven in the regular grade. According to Mrs. Hathaway, the per capita method has proved the best because it allows a certain amount for equipment, which is not always possible under the other plans.

Education of the semi-sighted is a tremendous proposition in itself that is being worked out fairly satisfactory in other states. It is an obligation that we should assume immediately.

To Recapitulate: A commission for the blind should be created by the state legislature. The commission should be non-political and its members should be paid salaries sufficiently high to attract educated, experienced, interested and competent persons. Sufficient funds should be appropriated to permit the commission to function efficiently and thoroughly. The commission should be authorized and petitioned to carry out and fulfill the following duties:

1. To prepare and maintain a complete register of the blind and the visually handicapped within this state and to collate information concerning their physical condition, cause of blindness and such additional information as may serve a useful purpose;

2. To investigate and report to the proper authorities at prescribed periods the condition of the blind and the visually handicapped, with recommendations concerning the best methods of relief for them;

3. To adopt measures for the prevention and cure of blindness;

4. To establish and maintain at convenient centers, shops and workrooms for the employment of blind persons capable of useful labor, and to provide superintendence and other assistance therefor and instruction therein;

5. To compensate the persons thus employed in accordance with prevailing wage scales for such kind of labor;

6. To provide means for the marketing of the products of the blind;

7. To act as a bureau of information for the purpose of securing employment for the blind elsewhere than in the state shops and workrooms;

8. To procure and furnish materials, tools, aid and assistance to blind persons engaged in home industries and to buy and sell the products of the blind wherever and however produced within the state;

9. To assist worthy blind persons in establishing their own businesses by furnishing capital through loans to be repaid in easy installments;

10. To conduct educational campaigns to promote interest in work for the blind and semi-sighted, and in the prevention and cure of blindness;

11. To cooperate closely, in carrying out its purposes, with other state departments and bureaus, non-official organizations and groups, and the medical profession;

12. To receive and utilize in carrying out its prescribed duties donations and bequests from private or other sources;

13. To avoid scrupulously the payment or donation to the blind of alms, doles, pensions or other forms of charity that would encourage dependence;

14. To perform any other acts within the limitations imposed by the legislature, in aiding the blind and visually handicapped to reach a state of independence.

PNEUMONIA*

By G. R. MAXWELL, M. D., F. A. C. P.
Morgantown, W. Va.

OSLER defines lobar pneumonia as "an infection caused by the pneumococcus, characterized by inflammation of the lungs, a toxemia of varying intensity and a fever which usually terminates by crisis." This gives us a good working definition.

There are four recognized types of pneumococcus, I, II, III, and IV causing lobar pneumonia. About one-third of all the cases are caused by Type I, and the remainder scattered irregularly through Types II, III, and IV. It was formerly believed that pneumonia was auto-infectious, that is, when a person's resistance is lowered the pneumococci that he has harboring in his mouth are capable of producing the disease in the lungs. However, it is now shown that most cases of pneumonia are not caused by the same type of organism that is found in the mouth of the individual. It is the concensus of opinion now that the disease is contracted by the infectious droplet from an active case, a convalescent who is still harboring the causative organism or from a carrier. The common cold, influenza, exposure to wet and cold, and excessive fatigue are predisposing causes of the disease. Negroes are more susceptible than whites. The average death rate is as follows: Private practice 15 to 25%; good general hospitals 25 to 35%; public institutions treating the lowest classes including many alcoholics 50 to 60%.

The onset of lobar pneumonia is sudden with chills, knife-like pains in the side, high temperature and pulse, cough, prune juice sputum, rapid respiration and often dyspnea. The patient may be quite nervous or delirious. Jaundice, herpes simplex, initial vomiting and pain in the abdomen resemblng appendicitis may be seen. You are all familiar with the physical findings in the chest. Later, cyanosis appears varying in direct proportion to the amount of circulatory and respiratory involvement. The patient generally remains quite ill from five to ten days when the severity of the symptoms gradually subside or in about 20% of cases by "crisis."

Bronchopneumonia is a lobular inflammation of the lungs in which several organisms can be identified as the causative factor. There are three types.

1. Primary bronchopneumonia occurring in children under four years of age. It is nearly always caused by the pneumococcus, is not associated with any other disease, and is usually mild. The symptoms are much like those of lobar pneumonia but the physical findings show a difference in distribution of pulmonary lesions.

2. Secondary bronchopneumonia is caused by staphylococcus, streptococcus, Pfeiffer's bacillus and rarely the pneumococcus. This is the most dreaded complication of the infectious diseases of childhood and the infectious and chronic debilitating diseases of middle and old age. The occurrence of this complication is usually marked by an increase in the severity of the symptoms the patient is suffering until finally the picture of bronchopneumonia appears overshadowing the original condition.

3. Primary epidemic bronchopneumonia. This is caused by the streptococcus hemolyticus and at times acquires very marked virulence. The mortality is high as was proven in the epidemic during the World War. Most of the post influenzal pneumonias at that time were caused by the streptococcus hemolyticus.

It is impossible to distinguish between a bronchopneumonia and acute bronchitis. In fact some authorities do not pretend to differentiate between them, but call them all pneumonias. This may be correct. But generally, they are classified separately. Personally, I classify it as a bronchopneumonia, if the

*Read before the Lewis County Medical Society, Weston, W. Va., Nov. 14, 1932.

fever runs high, and a bronchitis if the fever is low. This is of course not scientific, but personally I use it merely as an empiric way of telling my patients what is the matter with them.

TREATMENT

General.—The patient is put in a well ventilated room. I do not think it necessary to subject the patient and nurse to extreme exposure as is advocated by some physicians.

The diet should be sufficient to help in the fight the patient is making. Care should be taken to avoid the gastro-intestinal disturbances which so often complicate the disease. I avoid sweet milk when the temperature is up with the hope that less gas will be formed. The powers of digestion are almost nothing, owing to the high fever and toxicity of the disease. Yet we can artificially aid this function by heavy doses of pure pepsin in a solution of takadiastase and liquenzyme. Feed the patient and give heavy doses of this combination which will digest the food even if the natural digestive secretions are held in abeyance. This is one of the best assistants we have to aid us in our fight against this disease, or any other one that stops the power of digestion, especially typhoid fever.

The patient should be given all the water he will take. External hydro-therapy should be avoided except the daily, quietly given sponge bath.

There is some dispute as to the value of mustard plasters, but I have found them to give relief. I order them applied to the chest anteriorly and posteriorly every six hours with instructions that they are to be left on long enough for the skin to become pink.

In adults I give strychnine sulphate, gr. 1/40, every four hours. This acts as a stimulant.

As soon as a diagnosis is made digitalis should be started. We have in all cases of pneumonia potentially some circulatory disturbances, such as pulse irregularities, dilatation of the right heart and poisoning of the heart muscle by toxins. A dilated heart is one that is doing more work than the normal heart with much less nourishment because the coronary vessels are stretched, made narrower which means less blood supply to the heart muscle. Digitalis is the drug of choice. It should be given from the first. Don't wait until signs of cardiac failure appear and then start. By starting at the beginning we have the digitalization by the time it is needed. It is important to select a potent form of the drug. I find the pills grs. 1½ manufactured by Davies, Rose Company of Boston, very reliable.

My father gets excellent results with the use of veratrum viride in lowering the pulse rate and dilating the blood vessels, thus relieving the engorgement of the lungs. This drug dilates the calibre of all blood vessels, especially the abdominal vessels, thus "bleeding the patient in his own vessels," as one author has put it. This is truly a most reliable drug, and is free from danger, in spite of a general belief it is too drastic. If pushed too far it produces vomiting, and thus is an antidote for its own poisoning, throwing it out if an overdose is taken. This drug is not fully appreciated by many practitioners.

Later along in the disease he partially replaces the veratrum with digitalis. While they are physiologically opposed to each other, the one slows the heart and lowers the blood pressure by dilating the blood vessels, the other slows the heart but has no appreciable effect on the blood pressure, but maintains the muscular tone of the heart and blood vessels, thus sustaining the strength and endurance of the patient. A judicious combination of these two drugs gives us another prop to keep up the waning strength of the patient and holds him up through the crucial time of the crisis.

Cough.—An expectorant should be given to keep cough loose. If, however, the patient becomes exhausted from it, one half to one grain of codein can be given to provide relief.

Pain.—Quite frequently adhesive plaster can be used to control pain. If this fails an opiate can be given. The former objections to the use of opiates in this disease have been overcome. In giving morphine it must be

remembered that some people vomit a few hours after taking it.

If the patient is restless and cannot sleep some sedative should be given. Phenobarbital, grs. 1½, works very well. However, it may be necessary to give an opiate.

Distention of the abdomen with gas is a frequent symptom which is quite distressing and sometimes serious when it adds to the respiratory embarrassment. As soon as a diagnosis is made steps should be taken to avoid this. A 1% sodium bicarbonate enema given at once and then every twenty-four hours may avoid it, and a rectal tube inserted between times helps. The enemas may be repeated when necessary. If these fail, turpentine stupes applied to the abdomen will also help. In severe cases it may be necessary to give ½ to 1 cc of surgical pitutrin.

Cyanosis.—The treatment of cyanosis in the home is difficult. The use of the funnel with oxygen discharging through it is of little value although it may help some.

The use of the nasal catheter with numerous holes in the end may be of some value if it is inserted well back into the posterior nares and the patient does not breathe through the mouth. The oxygen should be discharged at the rate of two liters per minute. This has two serious objections; first, the low pressure tanks in use make constant regulating necessary, and second, the cost is prohibitive because from four to ten tanks will be used daily.

The best method is the use of the oxygen tent in which the proper concentration of oxygen can be kept. In the home this method is almost impossible. The prognosis is grave in a patient in which the pulse rate is not slowed and the cyanosis improved with oxygen therapy.

Some physicians like the action of alcohol in tiding their patients over the critical period of lobar pneumonia. I have not had opportunity to use it, as our State was dry before I began practice. I have not used it, but I am inclined to the belief that pneumonia has not been more fatal in West Virginia than in Pennsylvania where they have always had prescription whiskey. Older physicians tell me their percentage of deaths from pneumonia has not been greater under dry than under wet conditions. I also know that a heavy drinker has a poor show of standing the strain of a lobar pneumonia. It is almost invariably fatal. Alcohol lowers the vitality to such an extent that there is not sufficient resistance to withstand its ravages, and he succumbs with almost mathematical certainty. An habitual alcoholic should have whiskey along with the treatment to avoid the shock of rapid withdrawal.

Venesection was quite popular years ago but I do not think its popularity will ever return. However, the use of glucose intravenuously is of value. It supplies instantly large amount of food material which does not have to undergo digestive processes thus relieving the overworked heart. The patient given the glucose improves at once, looks better, breathes better and the pulse is slower and stronger. The dosage is one gram per kilogram body weight. The average adult is 50 to 75 kilogram or (110 to 165 pounds). Therefore the average dose would be from 50 to 75 grams. The initial dose should be 75 grams and the subsequent doses 50 gram. This is made in a 25% solution. This comes commercially in ampules as a 50% solution (25 grams of glucose to 50 cc water). To make a 25% solution, this is diluted with equal parts sterile distilled water. To give 75 grams, three ampules and 150 cc of distilled water would be needed, thus making 300 cc of solution. This should be given with a salvarsan tube coiled in water to keep the temperature at 100° to 110° F and given at the rate of 4 cc per minute.

Serum Therapy.—A serum has been produced for Type I infection which according to some has produced good results in the treatment of Type I pneumonia. Personally I have never used it.

Complications.—When a frank pneumonia lasts more than twelve days there usually is something complicating. A bronchopneumonia and a lobar pneumonia are perfectly compatible in the same patient. A beginning

bronchopneumonia, and the very first of a lobar pneumonia cannot be told apart, but the localization of the lobar pneumonia is manifest in a very few hours.

The treatment for bronchopneumonia is somewhat different from the lobar, although the lobar demands more vigorous action from a drug standpoint, and local applications are limited to the affected area. It is quite popular with some physicians to report that the child has a double pneumonia. I have not been able to tell a double pneumonia from a single pneumonia without finding solidified areas in lobes of each lung. If there are solidified lobes in both lungs the outlook is extremely critical. It is my belief that most of the "double pneumonias" are merely bronchopneumonias. Of course, a bronchopneumonia may be of many degrees of malignancy, and may be of graver import than a lobar pneumonia. It is not a self-limited disease, but may hang on for many weeks. One gets suspicious of tuberculosis if it keeps up an indefinite time.

Pleurisy.—This is the result when the inflammation reaches the surface of the lung. You are all familiar with the characteristic symptoms. This may subside with a simple dry pleurisy or may go on and form an effusion which may be serious or purulent. If purulent we have empyema. The physical findings may sometimes be confused with those of a thickened pleura. Exploratory aspiration will clinch the diagnosis. The treatment for the serous is aspiration and for the empyema rib resection.

Pericarditis is a very serious complication which is often terminal and overlooked. It most often follows infection of the right lung. If a large amount of fluid is present it may be aspirated.

Endocarditis.—The valves in the left heart are most often involved. A person with a valvular disease is more apt to develop this. No symptoms are present even in severe cases. It may be suspected if the fever is drawn out and irregular, when there are signs of sepsis and when signs of embolism appear.

Meningitis is the most serious complication. It is easily diagnosed, very little can be done in way of treatment and it is almost one hundred percent fatal.

Lung Abscess may occur though it is not so common. Septic symptoms with a purulent, productive cough together with x-ray helps with the diagnosis. As a rule it ruptures into a bronchus and the patient coughs it up, although surgery may be necessary.

Tuberculosis may follow sometime later due to the lowered resistance of the lung and the patient.

In conclusion allow me to remind you that pneumonia requires active treatment to help nature fight one of our most fatal diseases. We have only a comparatively short time in which to act if we are to be successful in our fight against death.

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AGENCIES CURB QUACKS

The chief agencies that give the public any protection against the quack in this country are national and include the Post Office Department, the Department of Agriculture and the Federal Trade Commission.

The theory is that in the purchase of medical preparations the public is supposed to be protected through the Food and Drug acts of the various states. In practice the facts are that of the forty-eight states in the Union those which make any attempt to protect their citizens against fraudulent or worthless medicines can be counted on the fingers of one hand.

In "Let the Seller Beware," an article appearing in the April issue of *Hygeia, the Health Magazine*, Dr. Arthur J. Cramp, director of the bureau of investigation of the American Medical Association, describes how the Federal Trade Commission protects the public.

Congress has given this commission power to investigate and take action in cases that involve or that seem to involve what are broadly spoken of as unfair trade practices. When such investigations prove that unfair practices have been indulged in, the commission orders the objectionable methods be abandoned.

SURGICAL DISEASES OF THE THYROID*

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In this short paper no attempt will be made to make an exhaustive report of the historical aspect of goiter. May it suffice to mention just a few names connected with the early recognition of the thyroid gland and its peculiarities. So far as it is known, Galen was the first to write of the two glands in the side of the neck which have no ducts. Columbus in 1562 mentioned that the gland was relatively larger in women than in men, while Casserius, forty years later, described it as a simple organ and concluded that it had no duct. Aquapendente in 1619 localized, for the first time this gland as the seat of goiter. Morgagni, about a hundred years later concluded that the thyroid was a secretory organ and that the secretion was carried away by lymphatics.

The embryology of the thyroid and the appearance of the fetal gland is of interest here because of the origin of the so-called fetal adenomata and the vestigial remnants of embryonic origin.

According to Kingsbury, colloid first appears in the four centimeter embryo. Briefly, the thyroid arises from the medial region between the first two pharyngeal pouches by the evagination of the epithelium in the ventral wall of the pharynx, immediately behind the tuberculum impar and in front of the copula. The anterior portion of the tongue is formed from the region between the first and second branchial arches and the root of the tongue from the copula and the tuberculum impar. The junction of the body of the tongue and the root marks the point of evagination. The evaginated portion increases with the length of the fetus and gradually becomes bi-lobed. The lumen becomes obliterated—the opening on the tongue being known as the foramen caecum. The obliterated stalk is the thyro-glossal duct and is the seat of origin of cysts of the midline of the neck. The thyroid is an unpaired gland situated opposite the second, third and fourth tracheal cartilages. It consists of two lateral portions or lobes which are united by a thin strip called the isthmus. Sometimes there is an irregular pyramidal lobe extending upward toward the thyroid cartilage. The external connective tissue capsule continues into the surrounding cervical fascia. It is connected by loose irregularly arranged connective tissue with another layer of dense connective tissue, —the middle cervical fascia which adheres intimately to the gland. The fascial attachments account for the movement of the gland during the act of swallowing. Immediately over the fascia are the sterno-thyroid muscles. The sterno-hyoid muscles overlie the sterno-thyroids and both are encircled by the middle cervical fascia. The sterno-cleido-mastoid muscles cover the lateral lobes. Superficially, one finds the superficial fascia, platysma and skin.

The thyroid has an unusually rich blood supply and drainage. The superior thyroid artery from the external carotid and the inferior thyroid artery from the thyro-cervical trunk ramify and anastomose frequently into small capillaries which form a network over each follicle. The venous blood is collected in the superior and middle thyroid veins, emptying into the internal jugular and the inferior thyroid vein—emptying into the left innominate. The thyroidea ima artery is sometimes present.

The lymphatics accompany the blood vessels and are abundant. They drain into the low cervical lymph nodes.

The nerve supply consists of post-ganglionic fibers from the superior and middle

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cervical ganglia. These enter with the blood vessels. Some fibers are also received from the superior and recurrent laryngeal nerves.

The gland itself consists of anastomosing plates as described by Rienhoff[1] in 1929, who working with wax plate reconstructions dissected them out. These plates contain the follicles with are characteristic and the unit of the gland and are separated by irregular masses of connective tissue.

It was formerly thought that the thyroid gland consisted of lobulations comparable to those of other glands but now as a result of the recent dissections and reconstructions, it has been shown that the plates pursue tortuous courses throughout the gland and are never completely surrounded by dense connective tissue. The follicles are separated from each other by reticular connective tissue in which courses the nerve, blood and lymph supply and drainage. It has been shown that the follicles are roughly spherical although the epithelial lining may be exceedingly irregular in certain pathological conditions. The lumen of the follicles is filled with colloid containing iodine. The follicles are frequently described as giving rise to new follicles by budding. One author recently claims that this budding does not occur,—that new follicles are not formed after puberty. This new idea has yet to be confirmed. Some authors still maintain that the follicles are united in a somewhat tree-shaped pattern—others that they are separate entities. The follicles of the normal thyroid are lined by low or flattened epithelium. There is no basement membrane and the cells rest on the inter-follicular, reticular connective tissue and thus are in intimate proximity to the network of blood and lymphatic capillaries. The epithelium shows great variation in the size of the individual cells and their arrangement, which depends on the age, sex, season of the year and diet, as well as the various physiological and pathological processes involving the gland. In general, the epithelium when inactive is low and flattened out, and tall, columnar and folded when functional activity is increased. The mitochondria are short, thin and rod-shaped. Most of them are in the distal end of the cell. Colloid is considered by some to be a reserve secretion, by others a waste product. The general consensus of opinion is that the former view is the more plausible. Large and small groups of inter-follicular epithelial cells without lumina are frequently seen. These are stated by some to be fetal cell rests. Reinhoff[1] considers them non-existent, the picture being due he thinks to the plane in which the section is cut—the wall or dome of the follicle presenting the picture of solid nests. The iodine content of colloid is quite high and was first mentioned by Bowman in 1896. Thyroxin was isolated by Kendall[30] in 1914, but the formula was not accurately described until 1926 by Harrington.[31] Now, synthetic thyroxin can be procured—it is a derivative of tyrosine. The most striking effect of the thyroid secretion is the regulation of the metabolic rate.

Simple or endemic goiter is prevalent in certain regions; i.e., Switzerland and in plains, especially those around the Great Lakes of this country. Intimate relationship exists between endemic goiter and iodine deficiency. Endemic goiter is not found along the sea-coast. Deficiency in iodine results in compensatory hypertrophy and hyperplasia. Marine[14] holds iodine all important while McCarrison[28] believes that goiter is caused by toxins produced by bacteria in the intestines by their introduction chiefly through impure drinking water. There are infections, however, in which the demand for thyroxin is greater and even the average amount of iodine here may be a deficiency for the new pathological state. Whether goiter is a primary functional state of the thyroid or a local manifestation of a systemic disease is yet to be determined. Hereditary factors certainly have to be considered. Marine's[14] work in the public schools of Akron, Ohio, demonstrates conclusively that endemic goiter is preventable by the administration of sodium iodide periodically (30 grams twice a year over a period of two weeks). Large amounts of iodine introduced into the body may pro-

duce an iodine thyroiditis. Marine[14] in 1911 stated that all goiters are a process of glandular hyperplasia and regression. He suggested systemic disease as a cause for goiter. Cysts are due to hyperplasia, alternating with more or less complete return to the colloid state,—each period of hyperplasia enlarges more the already enlarged follicles. Simple goiter commonly appears at puberty and is the result of a physiological effort at compensatory hypertrophy to meet new demands. Plummer[35] emphasizes the differences between the so-called toxic adenoma and exophthalmic goiter in their response to iodine. It is doubtful if these lines of differentiation can be drawn. All forms of goiter are simply different stages in hypertrophy and hyperplasia and must be regarded as such to understand correctly their etiology.

The terms hypertrophy, hyperplasia and involution must now be considered. Sir Victor Horsley,[25] in 1886, recorded first the microscopical changes of hyperplasia following surgical reduction, although Wagner had mentioned previously that hyperplasia occurred in the periphery of the gland. Halsted[15] in 1896 reported that the growth takes place after the forty-third post-operative day. It is known now that regeneration is more rapid if iodine is withheld. Partial removal of the gland results in hyperplasia until the gland reaches approximately its original size. The epithelium lining the follicles becomes tall and columnar, the numerous mitotic figures indicating increased cellular activity. The cytoplasm stains faintly and the nucleus occupies the center of the cell. Suitably stained sections show great increases in the mitochondria in the hyperplastic cells (Goetsch[24]). The follicle becomes enlarged while an increasing number of cells and epithelial spurs project into the follicle presenting at times an almost solid appearance. The colloid stains only faintly as compared with that of simple goiter. The iodine content varies inversely with the hyperplasia. Lymphocytes frequently appear in the stroma in increased numbers. This whole process is compensatory in nature, taking place in an effort to provide the body with thyroxin.

Involution—the opposite of hypertrophy and hyperplasia may be induced artificially by the administration of iodine, or it may occur spontaneously in different physiological reactions. The picture of folded epithelium fades away leaving only a few spurs of projecting buds. Many of the follicles remain distended but the lining epithelium becomes cuboidal or flattened, thus permitting the accumulation of colloid within the follicles. The stroma is increased and becomes more fibrous. During life this process of hyperplasia and involution takes place as the result of chemical, bacterial or nervous stimuli. When hyperplasia ceases, involution sets in. Reinhoff[1] points out that there are remissions and exacerbations in all cases of toxic thyroid except in acute Graves' Disease. He removed a portion of a gland before the administration of iodine and the histological picture was that of hypertrophy and hyperplasia. After iodine was given, the operation was performed and the picture was reduced to that of involution to almost the normal state. In certain areas there was hyperinvolution and in others hypoinvolution. He points out that these areas of hyperinvolution correspond to the so-called adenomata—cystic, fetal mixed, colloid and colloid cysts. The areas of hypoinvolution are encapsulated areas of persistent hypertrophy and hyperplasia—the so-called miliary adenomata as described by Ewing[32]. These areas explain why symptoms of hyperthyroidism may still persist after a remission. In 92% of cases of adenomata there were found typical areas of hypertrophy and hyperplasia, thus showing fairly conclusively that most adenomata are a part of the hyperplasia-involution cycle.

Goiter then is an enlargement of the thyroid caused in the first place by hyperplasia which may be followed by involution. If the hyperplasia is not too great, the gland may be returned to practically its normal size—it may, however, hyperinvolute into the colloid state. Hyperplasia may be compensatory with iodine deficiency, or as McCarrison[28]

found that although iodine is given, hyperplasia could be produced by a diet consisting of an excess of fat. Hyperplasia at pregnancy, lactation, adolescence or at times of special stress are of physiological character. The real problem is to determine why in some cases the hyperplasia is pathological rather than physiological. Colloid goiter is the end result of involution after hyperplasia. Many adenomata are the result of the hyperplasia-involution cycle and in less than 20% of cases are of neoplastic origin.

Beneficial results on goiter of substances now known to contain iodine are said to have been obtained by the Chinese about 1500 B. C. Sponge ash was used extensively in the time of Hippocrates. Dioscorides mentions specifically the use of sponge ash in the treatment of goiter. Rogers of the University of Salerno advocated ashes of seaweeds for goiter in 1170 A. D.

Iodine as an element was isolated by Courtois in 1811 and used medically by Coindet in 1820. Marine and Lenhart[14] in 1909 found that iodine given in any form is taken up by the thyroid. This occurs whether the gland is normal, colloid or hyperplastic. In 1914, Kendall[30] isolated thyroxin which contained about 65% iodine. Plummer[35] states that the thyroid functioning with iodine deficiency fails to maintain the normal amount of thyroxin in the body. This mechanism brings about stimulation of the thyroid and active hyperplasia. Plummer[35] further believes that the hyperthyroidism of adenomatous goiter is due to an excess of normal thyroxin. Subsequent reports do not confirm this belief. The response to iodine is the same in all hyperplasias. McCarrison[28] believes that iodine is an intestinal antiseptic. That the activity of iodine is due to its direct chemical action on the thyroid is the most reasonable hypothesis.

In March 1922, Plummer[35] began Lugol's solution in hyperthyroidism in the belief that the stimulation of the secretion of the thyroid was low, and a compensatory hypoplasia resulted. With iodine then in adequate amounts, he stated that the thyroid should not elaborate much or any of the abnormal thyroxin. The microscopical picture of hyperplasia with involution after the administration is ably described by Reinhoff.[9]

Diffuse Goiter With Involution.—This heading includes simple goiter of adolescence, and the great group colloid goiter. The usual age period of this group is from 15 to 25 years. This group as a rule responds admirably to iodine. There is hyperplasia, compensatory in character, because of the seemingly increased demand for thyroid secretion with a deficiency of iodine. Colloid goiter may develop any time in life as the result of hyperplasia being followed by involution. The thyroid of exophthalmic goiter during a remission may present the microscopical picture of colloid goiter. This same change may be produced in part in any hyperplastic goiter. These goiters are smooth, elastic, and free from lobulations. The lobes may or may not be symmetrical. The goiters of long duration are less apt to become toxic than the more recent ones. Some goiters are so large that they are best regarded as surgical for this reason alone. Loss of weight and tachycardia may be misleading but the whole may be due to the social handicap of the individual. If any irregularity appears in the gland whether there is nervousness or not, it has passed the stage of simple colloid goiter.

Goiters become firmer as the patient grows older. A very common type in young persons is the interstitial goiter as described by Hertzler[3] and Goetsch.[10] It is commonly a small firm gland associated with menstrual disorders. The girls often complain of choking. Many of these patients show mild toxicity. They appear to be due to endocrine imbalance. The fact that when the accompanying dysmenorrhea is relieved, the thyroid enlargement subsides makes the association almost certain. The basal metabolic reading in this entire group is of little importance. As Hertzler[3] so ably describes a patient of the interstitial type the following is reported to clarify the picture: "They are thin, spindly, timid of voice and action, their skirts hang listlessly below their knees as though the

droop of doom proclaims their hopeless state. They menstruate late and cast forth their scanty exudate in trials and tribulations. Their small rubbery goiters hang on their long thin tracheas as though they had no other purpose than to divide this long tube into segments, so devoid of thyroid tissue do they seem. For these there is no help. Why God did not amuse the devil by creating for Job such children is one of the mysteries of biblical history. It would seem that nothing—even death itself would exact such anguish of soul in a parent as to watch through a lifetime the suffering of such a child. The only tenable explanation is that endocrine disturbances had not yet been invented. A little bromide or luminal may give relief. When fate exhausts his means of torture for these patients, the operator begins to dilate, curette, remove appendices, overies, and finally operate for adhesions. Dante and Milton were dumb of intelligence and dull of imagination. When the surgeon has added his touch no image of Hell can conjure up its equal." Operation for this type is useless. For diffuse goiter, salts of iodine are given by mouth to children in localities where there is iodine deficiency. The course is slow, however, and the patient may return with a nodular goiter. In the adolescent stage where the nodular type has already been reached, Hertzler[3] thinks no interval treatment is of value but operation is indicated. The gross pathology is that of an uniformly, diffusely enlarged thyroid, soft in consistency. The cut surface is uniform in character and presents a honey-comb appearance. The microscopical picture shows evidences of involution with former hyperplasia. Plummer in 1926 stated that the enlargement was partly due to the formation of new acini. Many follicles are greatly dilated with the epithelial lining flattened and the follicle filled with colloid. Other follicles are smaller than normal. The traces of former hyperplasia can be seen in the form of projections of epithelium into the lumina of the follicles. Islands of active hyperplasia may be found. Great variation may be seen in different sections so that if one field or two be taken for the typical picture the diagnosis may be exophthalmic goiter. Some tendency toward lobulations may be seen.

Nodular Goiter With and Without Hyperplasia.—The presence of nodules in the thyroid is common. They are frequently called adenomata and regarded as true neoplasms but the trend at present is to regard the majority of these adenomata as localized enlargements resulting from hyperinvolutions. The age limits are usually from 15 to 20 years and the process appears in a gland which is already enlarged. The diffuse enlargement frequently obscures the presence of the nodule but involution allows its prominence being noted. Pressure symptoms are more frequently noted in this form of goitre. There may or may not be hyperthyroidism. For this reason the names toxic and non-toxic adenomata have sometimes been applied. Toxic adenoma according to Graham[29] is not due to the adenoma at all but to the presence of hyperplasia in the surrounding gland. This is doubtful and rarely if ever true. The general consensus of opinion is that the adenomata with hyperplasia and exophthalmic goiter should be included under the heading of Graves' Disease. Boyd[2] believes, however, that there is no reason to believe that the adenomata are in the slightest degree responsible for thryotoxicosis, it being a mere incident in the course of the pathological process, the hyperinvolution of a previously hyperplastic nodule. The only treatment here is symptomatic until operation is undertaken. Medical cure is out of the question. The fetal type of adenoma may be mentioned. It is frequent in small children and may grow mildly toxic. The microscopical picture is that of the thyroid of a four months' fetus.

Grossly, the adenomata are localized encapsulated nodules varying greatly in size. They may be single but are usually multiple. The encapsulation is mainly responsible for the belief that this is a true innocent tumor. It is customary to regard two varieties of adenomata, colloid and fetal. There are many variations microscopically between these two types, however. There may be a true

adenoma originating possibly in fetal cell rests. Nodular goiters are more apt to show degenerative changes than others. Hemorrhage is common and may be followed by cyst formation.

Microscopically, in the colloid form involutional bodies similar to those which result from the administration of Lugol's solution are found. The nodules surrounded by a capsule are made up of enlarged acini filled with colloid. The large acini are lined by flattened epithelium. A spurlike projection of epithelium may protrude into the lumen and is indicative of a preexisting hyperplasia. Moreover, there may be areas of active hyperplasia. The follicles in the gland surrounding the nodule are greatly compressed. The remainder of the gland may or may not show active hyperplasia. In the fetal type of adenoma the follicles are small and are supposed to be derived from fetal cell rests in the inter-acinar parenchyma. There is no convincing evidence of this, however. The lining cells are of the cuboidal type and some contain colloid but this is by no means uniform. A great many are only solid rests of cells. In many adenomata no sharp line of demarcation can be drawn between the fetal and colloid type as they often merge one into the other. Inter-acinar hemorrhage is frequent in both types. A rarefied light-staining stroma is seen in some cases. There are many groups of cells adjoining some of the follicles which may be an attempt to form new follicles but rather than this, we may look upon the thyroid as a gland functioning in part normally with some follicles quiescent or nearly so. This seems the more probable source of so-called new follicles rather than the cell rests of Wölfler, especially since Rienhoff[6] has shown by wax plate reconstruction that no cell rests exist in the inter-acinar stroma. In general this group must be considered as a functional disorder rather than a true neoplastic disease although true adenomata may be found.

Diffuse Goiter With Hyperplasia.—Gairdner described the symptoms of Graves' Disease in 1822, Parry in 1825, Graves in 1835 and Basedow in 1840. It was not until 1859 that Charcot described the disease under the name of exophthalmic goiter. The disease is much more common in women and occurs in the sensitive emotional type, this constitutional factor being a predisposing cause. The onset is sudden or even slow. The symptoms are those of excitation of the sympathetic nervous system. The four cardinal symptoms are: exophthalmos, tumor, tachycardia and tremor. Exophthalmos when present is bilateral in 80% of cases. It is the last sign to disappear if it does at all after operation. A protrusion of 31 mm. has been recorded. Blindness occasionally results from ulceration. The exophthalmos is due to a combination of three factors: (1) The restraining influence of the lids; (2) The stasis of venous circulation with edema of the orbital structures; (3) Vasomotor influence of the sympathetics. Other eye signs may be mentioned here. Grafe—Lid lag; Stellwag—the winking reflex which is normally about 3 to 5 per minute, may be reduced to one per minute in Graves' Disease; Dalrymple—widened palpebral fissure; Moibus—disturbances in convergence. Tremor is the more constant symptom. The skin is moist, the patient is excitable and there is marked loss of weight. The most important change is in the basal metabolic rate. There is frequent thymic enlargement varying according to different authors in from 50 to 90% of cases. The course of the disease varies—it may be acute with cardiac dilatation as described by Graves with wasting or exhaustion—other cases may have exacerbations and remissions as marked by the histological picture of hyperplasia and involution. Adenomatous nodules may develop in the course of the disease. These have been called toxic adenomata by Plummer[27] and others. Closer investigation shows that these cases do not differ from exophthalmic goiter in their histological picture and in their response to iodine. The heart is frequently damaged in the course of the disease. In Graves' Disease there is general lymphoid hyperplasia with a lymphycytosis usually of 25-60%. Plummer[35] states that twenty percent of the cases of

exophthalmic goiter are superimposed upon adenomatous thyroids. He believes that adenomata and exophthalmic goiters are distinct entities—that in exophthalmic goiter the whole gland is involved and in adenomata there is a localized reaction and they are only an incident in the course of endemic goiter. In exophthalmic goiter and in nodular goiter with hyperplasia, operation is imperative. Iodine in the form of Lugol's solution is given pre-operatively until the basal metabolic rate is down. The dosage is about thirty to forty minims a day over a period of about two weeks.

Grossly, the gland is generally enlarged though not always. The untreated gland is firm and dense and of a beefy appearance. After the administration of Lugol's solution, however, many involutional bodies appear with marked transition toward the colloid state. Areas of hyperplasia which have resisted iodine may be present. Warthin states that the lymphoid hyperplasia emphasizes the constitutional factors. Means maintains that iodine seldom abolishes more than a part of the thyrotoxic symptoms unless there is a subtotal thyroidectomy.

Microscopically, there is diffuse hyperplasia and glandular activity. The epithelium is tall and columnar. Many cells have irregular nuclei and present evidences of rapid multiplication. Papillary infoldings into the follicles are present. When involution takes place the retraction of the epithelium shows enlarged follicles. Other types are seen with small follicles. Little or no colloid is present. Seldom is there uniform hyperplasia. The stroma often shows collections of lymphocytes—definite follicles being found at times. They are more evident since the institution of iodine therapy—and are considered by some to be evidences of the involutionary process. Marine[14] in 1926 stated that post-operative hyperplasia is prevented by iodine.

Thyroiditis.—Marine[14] in 1911 stated that thyroiditis was very rare and when present was never primary. It is now well known that it occurs in many infections; i.e., tonsillitis, rheumatic fever, lues, tuberculosis, etc. Abscesses may form at times and discharge into the mediastinum, larynx, trachea or esophagus. Woody thyroiditis or Riedel's struma described by Riedel in 1896 is a chronic iron-hard tumor. In the early stage, there are many lymph follicles but later the gland is dense and sclerotic. It is frequently confused with carcinoma. There is rapid enlargement of the thyroid with pain, tenderness and dyspnea. Pain is pathognomonic in acute cases associated with hoarseness. The temperature may be 100°-104°. History of infection is usually present with marked leucocytosis. Areas of redness and fluctuation make the diagnosis of suppuration. There is little or no disturbance in the basal metabolic rate. The disease usually occurs in individuals under forty. There is a difference of opinion as to whether it is more common in goitrous thyroids or not. It seems, since it is usually secondary, that this would not be a factor in the development. Primary tuberculosis of the thyroid is rare but in generalized tuberculosis the presence of tubercles is common. Reinhoff[5] states that 3 to 10% of these cases are tuberculous. These tumors are hard to differentiate from malignant tumors. In lues, swelling of the thyroid is common in the secondary stage. Gummata are rare. These, too, are frequently confused with malignancy.

The treatment is operation, drainage if acute and as for malignancy in the chronic stage.

Malignant Lesions: Almost always arise only in thyroids already the seat of goiter. Plummer[35] in 1929 reported a series from the Mayo Clinic in which 2.7% of thyroid tumors were malignant. They began in benign goiters in 87% of cases, thus illustrating that nodular goiter is a surgical condition. In Simpson's cases 100% were goitrous thyroids previously. Carcinoma in this series was ten times more frequent than sarcoma. Many of the cases, however, of carcinoma are recognized only when the microscopical study is made. Carcinoma often orginates in an adenoma associated with symptoms of hyperthyroidism. In Simpson's[21] 55 cases this was

true in about fifty percent. Carcinoma of the thyroid occurs during the usual cancer age. A rapid, firm hard growth in a previous goiter is the usual picture. Fixations of the vocal cord are rare except in carcinoma but should be a part of every examination. The hyperthyroidism accompanying carcinoma is mild if any. There appears to be no relation between Graves' Disease and carcinoma although there is wild hyperplasia in the former. Fixation of the gland is an important feature.

The pathologist's report may be the first indication that carcinoma is present so varied is the picture. There is usually invasion of the capsule. As a rule, the carcinomata are hard but necrosis occurs frequently. Microscopically there are many types, among them, medullary, adeno-, scirrhous and squamous cell. The first two are common but the others are rare, and frequently the same tumor may present pictures resembling almost all of the types. Graham[29] states that there is a marked tendency toward invasion of the veins by the tumor cells. Metastases are most common in the lungs and then in bone. Simpson[23] has shown that there is no such thing as a benign metastasizing goiter. Although metastases may appear as normal thyroid, the followup has shown that carcinoma was invariably in the thyroid or appears shortly after the metastatic lesion was noted. Kolodny, in a review of the literature was able to find only one case of metastatic hypernephroma to the thyroid. Simpson,[22] however, has reported cases where there are areas in the medullary type of carcinoma which simulate the picture of hypernephroma. The papillomatous type of adeno-carcinoma is more favorable in prognosis than the other types. Wölfer reports a case well 18 years after operation and Smoler's case has remained well 27 years postoperatively. Roeder,[20] from the literature, reports only ten cases of the equamous type, all of them regarded as being of thyro-glossal duct origin. The average duration of life is about two years. The mortality varies according to authors from 50% to 85%. Kocher claims cures in eight out of ten cases which are well from 3 to 20 years without recurrence. The scirrhous type is rare.

Little need be said of the sarcomata except to note that they are of very rapid growth. They may be of mixed, spindle or round-cell varieties. Of these the round cell type is the more malignant.

The radical operation is advised in cases where there is possibility of complete removal. Craver advocates radium and x-ray. He reports a number of cases of which 30% were improved and apparently well after 3 to 7 years. Hertzler[3] condemns x-ray in goiter as a rule because it is useless in nodular goiter. Applied to Graves' Disease, its action being on connective tissue and not epithelium he considers that the help due to this treatment is from rest and *hope* engendered by the röentgenologist in spite of his treatment. Clement in his report of 60 cases of toxic thyroid notes 85% cures. He emphasizes that there is no pain or scar, that there is little loss of time and that the results are good.

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SALARIED POSITIONS

In case you are wondering what the editor means when he crusades continuously against "Tendencies in Medical Practice," here are a few of them, if not in a nutshell at least in a table. The survey covered sixty-nine medical colleges. Approximately 35 per cent. of those graduating from medical schools in 1925 limited their practice to a specialty within six years after graduation. An additional 35 per cent. of graduates look forward to the same kind of a career. These percentages were on the increase up to 1920.

That there is an increasing tendency for men to enter the practice at older age than previously, can be attributed only partially to the increased requirements.

That more graduates are practicing in the larger communities than seems justifiable according to population distribution.

That approximately one in every six graduates is destined to hold a full-time salaried position.

That 99 per cent. of the 1925 graduates located in the United States and that 39 per cent. of Canadian graduates also located here.

Now 48 per cent. of the population is in communities of less than 5000 and only 19 per cent. of the 1925 graduates were to be found there. Modern transportation methods prevent serious consequences arising from this situation, but it is improbable that this is the cause of it. The drift of graduates to the cities in this day would have occurred regardless of transportation methods and the means of reaching the farms. It is not confined to the practice of medicine.

It is possible that as the old practitioner's death leaves an open space in the village there will be a greater tendency on the part of the young man to fix himself in it than there was when it looked as if all the money were in the city. Times are changing in more ways than one.

Six years after graduation, 17 per cent. of the graduates of 1920 and 1925 were occupying full-time salaried positions.

If those positions were in large measure with private institutions and corporations, there is much that is alarming about it. If they are public payroll positions, the tendency in that direction well may be the subject of examination.

There is no question of the rapid encroachment of that kind of practice of medicine. We are not sure where the promotion of this kind of practice lies, whether with the medical colleges or elsewhere. In the matter of getting on the public payroll more and more graduates of engineering and agricultural schools, the schools are under suspicion.

—ILLINOIS MEDICAL JOURNAL.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

Does a primary tuberculous infection afford adequate protection against consumption? That is the challenging question asked by Chester A. Stewart in a recent article. He answers in the negative, thereby disagreeing with those who hold that "a little tuberculosis is a good thing." His conclusions are based largely on observations on 84 children, who developed consumption, in a series of more than 10,000 cases examined and followed up at Lymanhurst School in Minneapolis.

TUBERCULOUS INFECTION

Initial infections with tubercle bacilli are so common that most persons remain ignorant of the fact that they have primary tuberculosis until its presence is revealed by a positive tuberculin reaction. Nonallergic individuals apparently possess a remarkable ability to repair extensive as well as slight damage wrought by a first invasion of tubercle bacilli. Tuberculosis of first infection may be regarded as a benign disease whose prognosis is good and which rarely causes death.

Regardless of how one may interpret the process whereby the body "resists" the first infection by tubercle bacilli, it is important to determine whether this first infection enhances or impairs the normal mechanism of resistance with which man is endowed to combat the disease.

Of the slightly more than 10,000 children examined at Lymanhurst School for tuberculous children during the past decade, 84 were found to have consumption (reinfection pulmonary tuberculosis), classified as follows:

Group I—Four children (5 per cent) whose initial examinations were negative but who had reinfection pulmonary tuberculosis (adult type) on reexamination.

Group II—Nineteen children (23 per cent) with reinfection pulmonary tuberculosis when first examined but no evidence of primary tuberculosis (childhood type).

Group III—Twenty-five children (29 per cent) with primary and reinfection pulmonary tuberculosis coexisting when first examined.

Group IV—Thirty-six children (43 per cent) with primary tuberculosis exclusively on first examination in whom reinfection pulmonary tuberculosis later developed.

ANALYSIS OF GROUPS

No significant conclusions seem warranted on the basis of data available in Group 1. The observations made on Group II failed to reveal the sequence of events which led to the condition and therefore failed to contribute evidence for or against the notion that primary tuberculous infection affords protection against consumption.

Group III, however, in which primary tuberculosis was found coexisting with reinfection tuberculosis provides circumstantial evidence that primary infections frequently fail to prevent the development of phthisis. This evidence is supported by the observations of Group IV, whose records are known with sufficient detail to prove that primary tuberculous infections do not prevent phthisis from developing, and to indicate that first infection by tubercle bacillus alters the normal state of resistance possessed by the uninfected body in such a manner that, instead of again being able to experience the benign form of the disease, the patient is doomed thereafter to have some reinfection type of tuberculosis (consumption and the like) develop, if successfully reinfected.

These thirty-six children, when first seen, gave positive tuberculin reactions, and on röentgen examination their films were normal in nine instances, revealed calcified hilus lymph nodes in fourteen cases, and Ghon tubercles associated with calcified hilus lymph nodes in the remaining thirteen cases. In no instance was evidence of reinfection types of tuberculosis found in this series of thirty-six children coexisting with the primary disease present at the time they were first examined. At that time, therefore, each child in the group had tuberculosis of first infection exclusively, visualized by röentgen examination in twenty-seven cases and not revealed in the remaining nine instances. Subsequently, these

thirty-six cases (Group IV) were followed and repeated examinations were made, and after varying periods of observation a reinfection type of tuberculosis (consumption) developed in each child in this group.

A typical case selected from the general group illustrates the development of consumption postdating and superimposed on a preexisting primary tuberculosis. A girl with a positive tuberculin reaction and four calcified Ghon tubercles demonstrable by röentgen examination made in 1926 remained in good health for four years, but in 1930 a new subapical infiltration appeared on the right. Later this lesion progressed and now, after two years of sanatorium care, hers is classed as a moderately advanced case of consumption. Her multiple protective foci have failed to protect her adequately.

Obviously, the Group IV cases, (43 per cent) provide proof that their primary tuberculous infection *failed to prevent consumption.* This proportion of failures rises to 72 per cent if Group III is included. Lack of detailed information available in Groups I and II explains, the author suspects, why this failure to protect cannot be measured at 100 per cent. Opie, by autopsy found lesions of primary tuberculosis in all cases presenting a reinfection type of tuberculosis.

Reinfection, the Essential Factor.—At Lymanhurst to date, no case proved to be consumptive as a direct result of a first infection, has been found, and no case of a second crop of primary lesions has yet developed in an allergic child. This evidence, together with the observations of Opie, reveals exactly what is needed to become a consumptive, namely, reinfection on tissues previously sensitized by a primary infection. If that is true, artificial immunization with an attenuated organism (BCG) alters the normal status of the uninfected consumptive patients may be harvested when the vaccinated children reach puberty, and later. Certainly several years of observation will be required before the value of artificial immunization can be definitely settled.

The term "childhood type of tuberculosis" adopted some years ago by the National Tuberculosis Association is not entirely satisfactory. Would it not be better to designate this type as "primary pulmonary tuberculosis"? Furthermore, the implication of the term "adult type of tuberculosis" is contradicted by the observation that this form of the disease develops in children with appreciable frequency. The term "reinfection type of tuberculosis" is preferable.

The conception of tuberculosis held by the author justifies the advocacy of special protection from reinfection for all children (and adults also) who are allergic to tuberculin, regardless of whether symptoms and primary lesions demonstrable by x-ray are present or absent. A positive tuberculin reaction "does not necessarily indicate disease." Ghon's careful postmortem studies revealed primary tuberculosis lesions in from 90 to 95 per cent of infected children. The usual examination method by röentgenography is not sufficiently sensitive to discover the primary lesion in all cases, but if the tuberculin reaction is positive such a lesion must be, or have been, there. The röentgen study should not, therefore, be accorded too much authority in determining that the individual has or has not primary tuberculosis for that question is settled by the tuberculin reaction. The röentgen examination of positive reactors, he believes, should be made only for the special purpose of determining whether reinfection types of tuberculosis are present or absent.

How should cases of primary tuberculosis be treated? Manifest disease, of course, may require sanatorium care or its equivalent, but for first infection types generally, observation and good hygienic care are all that is needed. The summer camp provides a pleasant outing for infected children, but nothing of added basic curative value. Admission to a preventorium unfortunately separates a child from home environment, and probably furnishes nothing that could not be obtainable outside a preventorium. Experience at Lymanhurst, which is a day school planned for tuberculous children, discharges its obligation fully without the aid of a sanatorium. Certified homes seem superior to resorting to institutional care. What is needed, in short, is good medical observation, intelligent home care, and school cooperation.

Does a Primary Tuberculous Infection Afford Adequate Protection Against Consumption?—Chester A. Stewart, Jour. A. M. A., Apr. 8, '33.

PRESIDENT'S PAGE

The first time I attended an annual convention of the West Virginia State Medical Association—nearly twenty years ago—I heard considerable talk about the Old Guard. I was told that a certain group of doctors, who possessed more than the average amount of political acumen, practically ran the society. They were not only credited with dictating the activities of the association but it was also said that they chose the officers who were elected each year. It was intimated that there was something sinister—perhaps some ulterior motive—behind the successful machinations of the Old Guard. Certain rebellious spirits expressed their intention of forming a Young Turk Society to overthrow this bureaucratic organization.

As the years passed by I had an opportunity to observe that the members of the Old Guard came back regularly to each annual convention and took an active part in the business and professional work of the association. Furthermore, I discovered that in the intervals between the annual conventions they devoted considerable time to formulating plans and ironing out difficulties for the benefit of our society. Some of the other men who were most critical of the political regime returned fairly regularly to subsequent conventions but for the most part their attendance was desultory and their interest in the affairs of the association was not maintained consistently.

During the last two decades the West Virginia State Medical Association has made notable progress. The quality of our scientific programs has kept pace with the best efforts of the medical world. Our West Virginia Medical Journal compares very favorably with the journals published by other larger states. Our financial standing is excellent. The component County Societies work together in harmonious cooperation. The central office, under the management of our efficient Executive Secretary, has extended the activities of the Association to such an extent that it is now one of the most influential organizations in the State.

These things have come to pass under the guidance of the Old Guard. They have done well. The personnel changes very gradually through the years. Any one of us, who has the best interests of organized medicine in his heart, who values our association so highly that he is willing to spend time, thought, and energy in its service, and who continues steadfast in his devotion year after year, is eligible to membership in the Old Guard. Selfishness, personal prejudice and jealousy are not the proper qualifications. For my part, I hope we shall always have an Old Guard to guide our destiny. I take pleasure in dedicating this page to that group of thoughtful, steadfast workers who have contributed so much to the advancement of organized medicine in West Virginia.

My compliments to the Old Guard!

D. A. MacGregor
President.

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TIME FOR A SHOWDOWN

The time is rapidly approaching for a showdown on the question of medical practice by corporations in the state of West Virginia. Perhaps within the next 30 days we shall know whether or not an unlicensed and unqualified lay corporation can continue to traffic in medical service and exploit the medical profession for private gain.

In the last two issues of this JOURNAL we have called attention to the suit of Dr. J. T. Nolen against the Valley Camp Coal Company to restrain and enjoin the company from practicing medicine without a state license. We are pleased to announce that within the past month two other well-known physicians, Dr. G. G. Irwin and Dr. W. P. Black of Charleston, have joined with Dr. Nolen as plaintiffs in the above-styled case. Depositions in the case are now being taken and it will probably be presented before the Kanawha County Circuit Court within the next two weeks.

Again we wish to call the attention of the medical profession to this pernicious trend in West Virginia toward the corporate practice of medicine. The Valley Camp Coal Company is only one of many companies that employs a doctor at a fixed salary and then sells the services of the doctor to its employees at a handsome profit. The service is paid for by the employees through payroll deduction. These deductions, in many instances, amount to as much as $1,000 per month. The doctor is usually paid about $250 per month. The company pockets the difference.

There are several hundred "company doctors" in West Virginia affected by the system outlined above. They are more or less powerless to help themselves. It is natural to assume that if they complain, they will immediately be let out and a more complaisant physician employed.

Of all the abortive trends in medical practice in this state, we feel that this recent development in the mining area is undoubtedly the worst. If industry can profiteer at the expense of the medical profession and at the expense of their own employees, there is no reason why any other lay group could not incorporate for the sole purpose of bartering medical service to the public. However, if a license to practice medicine in West Virginia carries any privilege whatever, we feel that the courts of this state will not allow that privilege to be violated.

Somehow we can't understand how our industrial leaders ever got mixed up in this form of medical racketeering in the first place. They must know that they are not rendering any medical service to their employees. They must know that the medical service is being rendered by licensed physicians. They must know that their employees are paying for that service. And knowing this, it seems preposterous that they should figure themselves entitled to a "rake-off."

Perhaps our industrial leaders have decided that a "check-off" of from $800 to $1000 per month is too much for a company doctor to receive for his services. That, however, is a matter that should be decided by the employees who pay the bill; not by the company which administers the fund. If the monthly "check-off" is too high, then the deduction from the payroll of each employee should be reduced. The cost of sickness is high enough already without industry exacting a "middleman's profit."

THE NEW TAX LAW

So much has appeared in the newspapers relative to the revenue bill passed by the recent extraordinary session of the legislature that we assume most doctors and hospital executives are familiar with the general provisions of this measure.

The gross income feature of the revenue bill provides for a tax equal to one percent of the gross income of both hospitals and physicians. There are no exemptions in the case of hospitals. Physicians, like all other persons affected by the bill, are entitled to an exemption of $600 if single, $1,000 if married, and an additional exemption of $200 for each dependent provided the total exemption shall not be more than $2,400.

Prior to the passage of the revenue bill, hospitals in West Virginia were taxed three-tenths of one percent under the old gross sales tax, with an exemption of $10,000. The present revenue bill, therefore, materially increases the taxes that each hospital shall pay. However, this increase is offset to a considerable extent by the tax limitation amendment which lowered the property tax on hospitals from $2.60 to $1.00 on each hundred dollars valuation. Hospitals that own their own buildings will have little in the way of extra taxes to pay, but hospitals that occupy rented quarters (unless able to secure a reduction in rent) will be rather hard hit.

All returns are for the calendar year ending December 31, but if a Doctor or hospital keeps books on a basis other than the calendar year they may, with the assent of the tax commissioner, pay taxes for the year covered in the accounting period.

Forms to be filled out in connection with the payment of taxes will be furnished by the tax commissioner and all such taxes are payable on April first of each year. However, quarterly tax payments may be made upon request to the commissioner.

To illustrate the method of computing and paying the new tax under the revenue bill, we will assume that a Doctor has a gross income of $5,400 per year. He is married and has two dependent children. His total exemption, therefore, is $1,400. This amount, deducted from $5,400, leaves $4,000 of taxable income at one percent, or $40 per year. This can either be paid in a lump sum or spread out into four quarterly installments of $10 each.

In levying the gross income tax upon hospitals, and upon all other businesses, it was assumed by the legislature that the tax would be passed on to the consumer. This will be a difficult task for the hospitals to perform; especially with the public already decrying the alleged high cost of hospital care. It will be further complicated by the fact that approximately 35 percent of hospital bills are never paid. However, it should be possible in most instances for the hospitals to pass at least a good portion of the gross income tax on to the consumer, just as other business houses and institutions will do.

There has been a question in the minds of some doctors as to the exact meaning of the term "gross income." It has been reported in some quarters that the tax of one percent would apply to all accounts whether collected or not. This is not the case at all. Gross income means the actual income collected during the calendar year. If a Doctor does $6,000 worth of work and collects only $4,000 of that amount, his tax is based upon the amount collected, or $4,000.

COUNTY SOCIETY NEWS

Due to the crowded condition of this issue of the JOURNAL, the county society news items are published in the back section. This was necessitated by the publication in this issue of the various convention minutes, committee reports and the annual audit of the Association finances. We hope that every member, and especially those who were not in attendance at Charleston, will read the report of the convention transactions and familiarize themselves with the work and the status of the Association.

CONVENTION TRANSACTIONS

Sixty-Sixth Annual Meeting, West Virginia State Medical Association

COUNCIL MEETING

The council of the West Virginia State Medical Association met in the Daniel Boone Hotel on the morning of May 22 with fifteen members and nine visitors present. Following approval of the minutes of the previous meeting the reports of the Executive Secretary, and the Publication Committee were received. Reports of the district councillors were also received and filed. The various committee reports were referred to the House of Delegates.

Honorary memberships were conferred upon Dr. H. A. Walkup, Mt. Hope; Dr. O. J. Henderson, Montgomery and Dr. A. O. Flowers, Clarksburg.

On motion of Dr. M. T. Morrison the Council elected the present Publication Committee of the JOURNAL to succeed itself during 1934.

A resolution was introduced by Dr. G. A. Smith memoralizing the American Medical Association to take steps toward a reduction in the number of doctors graduating each year from the various medical colleges in the United States. This resolution was seconded by Dr. Gocke and was unanimously carried.

Dr. Gocke moved that the Council approve the appointment of a committee to confer with the governor regarding the needs of hospitalization in this state. This motion was seconded by Dr. Morrison and carried. Drs. Gocke and Smith were appointed on this committee with Dr. Oates as chairman.

Dr. J. T. Nolan was then introduced and explained his suit against the Valley Camp Coal Company in an effort to stop the coal company from practicing medicine without a license. The case was discussed at some length and then Dr. Gocke moved that the council approve the action of Dr. Nolan in the suit and that a sum not to exceed $250 be appropriated to assist Dr. Nolan, if necessary, in bringing his case to a successful termination. This motion was seconded and carried.

There being no further business the council adjourned.

SPECIAL COUNCIL MEETING

A special meeting of the Council of the West Virginia State Medical Association was held in the Daniel Boone Hotel, Charleston, on the afternoon of May 23 with thirteen members and five visitors present. The special meeting was called in order to consider the action of the House of Delegates on the evening of May 22 giving the council power to act in the matter of acquiring a permanent home for the West Virginia State Medical Association. This action simply placed the matter in the hands of the council, said council to either accept or reject the idea.

Mr. Savage discussed briefly the financial status of the Association, pointing out that while the liquid assets of the Association were more than $22,000, part of this was tied up in the Nicholson insurance policy, part with the Fidelity Investment Association and one or two other investments that could not be touched without a loss to the Association. Mr. Savage also pointed out that the Association was morally responsible for the debt on the Nicholson home.

Dr. Bloss made a plea for the acquiring of a permanent home for the Association, pointing out the advantages and calling attention to many of the unusual bargains in real estate in Charleston at the present time.

Dr. Rutherford advised the council that his county society in McDowell several years ago had set aside 10% of its annual surplus into a special fund to be turned over to the State Association at such time as the Association might acquire a permanent home.

Dr. Goff stressed the fact that the Association could not afford to consider any permanent home project that would jeopardize the financial standing of the Association.

Present real estate values in Charleston were discussed by Dr. Black who pointed out that suitable property for the permanent home could be acquired now at a low figure.

Dr. Hoge cautioned the council not to attempt to take any definite action until all the facts and figures relating to the purchase, erection and operation of a permanent home were available. He suggested that the permanent home committee be authorized to secure such data and present it to the council at its next meeting.

It was then moved by Dr. Smith that the per-

manent home committee of the Association be authorized to take options on Charleston property and to report back to the council at a special meeting to be held when and if the options were taken. This motion was seconded by Dr. Goff and carried.

On motion of Dr. M. T. Morrison, seconded by Dr. G. R. Maxwell, Mr. Savage was authorized to pay the annual premium of $1301 on the Nicholson insurance policy. There being no further business to come before the council, the meeting adjourned.

JOE W. SAVAGE,
Executive Secretary.

HOUSE OF DELEGATES

May 22, 1933

The House of Delegates of the West Virginia State Medical Association convened in the Daniel Boone Hotel, Charleston, at 8:00 o'clock on the evening of May 22, 1933, with Dr. D. A. MacGregor, President, presiding. Minutes of the previous meeting were dispensed with and approved as published in the WEST VIRGINIA MEDICAL JOURNAL.

The following reports were received and filed:

Committee on Necrology, presented by Dr. C. O. Henry.

Committee on Public Policy and Legislation, read by Dr. R. A. Ireland.

Committee on Medical Economics, read by Dr. J. Ross Hunter.

Committee on Publication, presented by Dr. James R. Bloss.

Report of the Committee on Audit of Association Finances, read by Dr. C. G. Morgan.

Report of the Executive Secretary.

Special Committee reports:

Report of the Cancer Committee, presented by Dr. Russell Bailey.

Dr. W. P. Black presented an informal report of the Committee on the Permanent Home, pointing out the excellent real estate values and suggesting that some action be taken in purchasing a suitable site. Dr. Butt moved that the Council be given authority to take such action as they saw fit in this matter. This motion was seconded by Dr. Bloss and after considerable discussion was carried.

Dr. W. T. Gocke submitted a resolution condemning any member for the use of his past or present official status in the Association in such a way as to give rise to the belief that the Association had taken any action for or against any controversy outside its jurisdiction. This motion was seconded by Dr. Irwin and carried.

Dr. Vest presented a resolution in regard to specialty examining boards, remarking that the matter would come up at the House of Delegates' meeting of the American Medical Association and moving that the resolution be adopted. The motion was seconded by Dr. C. G. Morgan and carried.

Dr. Vest presented a second resolution relative to the report of the Committee on the Cost of Medical Care, moving for its adoption. The motion was seconded by Dr. Morgan and carried.

There being no further new business, the meeting adjourned.

May 23, 1933

The House of Delegates of the West Virginia State Medical Association convened in the Club Room of the Daniel Boone Hotel, Charleston, at 9 o'clock on the evening of May 23 with Dr. D. A. MacGregor, President, presiding. Following the President's Address delivered by Dr. MacGregor, nominations for President were in order. Dr. O. D. Barker placed in nomination the name of Dr. Roy Ben Miller, Parkersburg. This nomination was seconded by Dr. V. T. Churchman and Dr. W. T. Gocke. There being no further nominations, Dr. Miller was declared President by a unanimous ballot cast by the Secretary.

The remaining officers and committee members were elected as follows:

First Vice-President, Dr. A. G. Rutherford, Welch.

Second Vice-President, Dr. G. H. Barksdale, Charleston.

Treasurer, Dr. T. M. Barber, Charleston.

First District Councillor, Dr. R. U. Drinkard, Wheeling.

Second District Councillor, Dr. G. R. Maxwell, Morgantown.

Third District Councillor, Dr. M. T. Morrison, Sutton.

Fourth District Councillor, Dr. Ray M. Bobbitt, Huntington.

Fifth District Councillor, Dr. B. W. Steele, Mullens.

Fifth District Councillor, (to succeed Dr. A. G. Rutherford) Dr. B. S. Clements, Matoaka.

Sixth District Councillor, Dr. G. A. Smith, Montgomery.

Chairman, Scientific Committee, Dr. R. J. Wilkinson, Huntington.

Members, Scientific Committee, Dr. E. B. Henson, Charleston and Dr. C. J. Reynolds, Bluefield.

Committee on Professional Relations, Dr. R. K. Buford, Charleston.

Committee on Medical Education, Dr. H. T. Phillips, Wheeling; Dr. S. L. Cherry, Clarksburg and Dr. C. B. Wylie, Morgantown.

Delegate to A. M. A., Dr. R. H. Walker, Charleston.

Alternate Delegate, Dr. H. T. Phillips, Wheeling.

Place of meeting for 1934, Huntington.

Dr. R. U. Drinkard, Chairman, then presented the report of the Committee on the President's Address, heartily praising the contents and urging the Association to go on record as endorsing his recommendations. On motion of Dr. A. H. Hoge, the report was accepted and carried.

Under the head of unfinished business, Dr. Vest read the report of the Reeves Memorial Committee which was received and filed.

Dr. Hoge offered an amendment to the Reeves report, deleting Section 2 from the resolution which stated that the 1935 session be held in Fairmont at which time the monument would be dedicated. The amendment was recorded to the effect that the year 1935 not be stated but some year in the near future. This amendment as reworded was seconded and carried.

Dr. Henry moved that thanks be extended to the press and all those who helped entertain the Association in any way during its annual meeting. The motion was seconded and carried.

Dr. R. G. Leland then delivered a message to the House of Delegates from the American Medical Association, and there being no further business the meeting adjourned.

Joe W. Savage,
Executive Secretary.

REPORT OF THE EXECUTIVE SECRETARY

This report will be rather short because many of the activities of my office have been covered in the various committee reports which you have heard tonight.

This report will deal chiefly with membership and finance. First, however, I would like to make one or two observations that I think worth while.

For the past five years I have urged the various councillor districts within our Association to hold District meetings at least once each year for the purpose of bringing our members in closer touch with each other and moulding a stronger state organization. The purpose for which such conferences are held is accomplished in the northern part of the state by the Monongalia, Marion and Harrison county societies, who regularly hold such joint meetings. During the past year the Fourth Councillor district fell in line and held a splendid district meeting at Huntington. I hope this will develop into an annual custom of the Fourth district and again I urge that the other councillor districts follow this plan. I think one district meeting each year by each councillor district will be a great aid in building our state association into a stronger organization. If and when such meetings are held I hope they will be social as well as scientific.

My next observation is in regard to the legislative activities of our State Association. I have had the opportunity of watching many organizations and interests in action at the legislature. Those that are successful are those that have but one definite objective in mind. As a matter of fact, by far the larger majority of lobbyists have no measures at all to push but give their entire time to quashing legislation unfavorable to the interests which they represent. Our Association went into the recent session with three special measures to put through, and a fourth to work on in spare time. This, in addition to killing off half a dozen or more measures hostile to the Profession.

I am mentioning this, not to complain and not to make any excuses, but in the hope that in the future our Association will not attempt such an ambitious legislative program. There is no question in the world but what we could have put through our bill to give the public health council medical supervision over the state institutions if that bill had been the only one we were responsible for. This bill was held up until the last, while we worked on the first two projects. When it did come up it passed the Senate and received a two-to-one vote in the house, but a four-fifths majority was needed in the house to suspend the rules and put the bill through, and so it died on the last day of the session. Had the bill been introduced earlier, it would then have come up in its regular order requiring only a majority vote, and it would now be a law of this state.

I mention this medical supervision bill because it so ably demonstrates the point I want to put across. There is no use to discuss this further at this time, because we won't have another legislative session until 1935. At least I hope we won't. But when 1935 rolls around I hope the Association will settle

definitely on one legislative project and one only. In my opinion your legislative committee did fine work in successfully killing off all hostile legislation measures and I am sure they would have accomplished much more if they had not had such a heavy load to carry through the session.

I feel that one of the most important developments in the entire history of this Association was the recent decision of the state supreme court in the *Sloan vs Mitchell* case in Cabell County. Assuming that all of you read your State Journal, you are no doubt familiar with this decision. To review briefly: Mitchell was an advertising quack, unlicensed and untrained, in Huntington. His advertising matter was so preposterous that the Cabell County Medical Society, in an effort to protect the public, finally brought Mitchell to trial for practicing medicine without a state license. The jury failed to convict Mitchell and there followed a series of taunting, swaggering advertisements that charged the medical profession with everything from persecution on.

The Cabell County society then decided to go into the matter in a big way. Their attorneys advanced the theory that Mitchell might be stopped through injunction proceedings in a civil court. Acting on this theory, an injunction suit was brought in the Cabell county circuit court. The lower court ruled against the Cabell society and this ruling was carried to the supreme court of West Virginia. On March 31, 1933, the supreme court held "The right of a licensed physician and surgeon to practice his profession is a valuable franchise in the nature of a property right to protect which he may sue in equity in the interest of himself and other physicians similarly situated to enjoin a person from encroaching upon said right by engaging in the practice of medicine and surgery without a state license."

This supreme court decision sets up another protective barrier for the medical profession in this state; a barrier which few quacks will dare to cross. With this decision the *Sloan-Mitchell* case went back to the Cabell county circuit court and a few days ago, at long last, an injunction order, forever restraining Mitchell from practicing in West Virginia, was issued. While the Association was vitally interested in the *Sloan-Mitchell case*, both financially and otherwise, credit for this important work must go to the doctors in Huntington and vicinity who carried the case through to a successful termination.

A second legal case in which the Association is greatly concerned is that of Dr. J. T. Nolan versus the Valley Camp Coal Company in the circuit court of Kanawha county. Dr. Nolan, together with Dr. G. G. Irwin and Dr. W. P. Black, has entered an injunction suit to restrain the defendant coal company from practicing medicine without a state license. Dr. Nolan is suing on behalf of himself and his medical confreres on the theory that his own license is a property right that is being infringed upon by the defendant company. The Nolan case, therefore, was made possible by the ruling in the Sloan-Mitchell decision. It is claimed by Dr. Nolan that the Valley Camp Coal Company is collecting a check-off from its employees for medical service, that it employs two physicians to render this service, and that it pays the physicians much less than is collected for the service. The company, therefore, according to the complaint, is exploiting the services of the two physicians for profit. This case is still pending in the Kanawha county circuit court. A favorable decision for the plaintiff will mean a great deal both for the Association and for several hundred contract and mine doctors in this state.

In spite of predictions to the contrary, our membership status this year compares very favorably with past records. True, our delinquent list is larger by 44 members than it was at convention time last year, but last year's convention was held one month later than the present meeting. Hence, in 1932, we had an additional month to get in our delinquent members. I feel practically certain that by June 20, the date of our 1932 meeting, this year's delinquent list will be smaller than the delinquent list presented to you at last year's convention.

On June 20, 1932, we had 916 members paid up and in good standing. Today, one month earlier in the year, we have 848 members paid up and in good standing. Last year we had 192 delinquents. This year we have 236. Our total membership this year, therefore, is but 24 members short of last. Last year we had 1108 members; this year we have 1084.

It might be interesting to point out that at convention time in 1931, which was two years ago, the delinquent list was 220 or approximately what it is today. Therefore we are undoubtedly holding our own in membership, which should be considered as a rather favorable sign in this era of hard times.

We anticipate, of course, that approximately 75 percent of the present delinquent members will pay up before the close of the year. We base this assumption on past experience. Last year, for example, when we had 192 delinquents at convention time, we had less than 50 at the close of the year. With

economic conditions undoubtedly growing better, I feel sure that we will have no difficulty in reducing this year's delinquent list to less than 50 members by the close of the present year.

The West Virginia Medical Journal has been through its most trying year in history. On every hand, publications of all kinds have lost money and many of them have suspended publication because of the tremenduous falling off of national advertising. We have felt this slump to some extent but somehow we have been able to retrench; to sign up new advertisers when our old friends were forced to withdraw. As a result the Journal finished up the year with a cash profit of $1,150.86. This is the third largest profit the Journal has ever made, and it was made exclusively on advertising. The Journal has no outstanding obligations and its total assets are now $7,867.55.

I might say, simply as a matter of interest, that the May issue of the Journal, which is not included in this report, carried the largest volume of advertising we have ever had.

The annual audit of the Association finances, made by Mr. B. H. Puckett on May 1, 1933, will show that the assets of the Association decreased $1,493.07 during the past 12 months. By way of explanation, I would like to say that the Association made a number of non-recurrent expenditures during that period which more than offset this sum. The Newquist survey, for example, was $1500. In addition the council authorized an expenditure of $500 in the Sloan-Mitchell case in Cabell county. Also the premium was paid on the Nicholson insurance policy, amounting to $1301. The cash surrender value of this policy, which is not taken into consideration, is now $4,325.00. I would also like to point out that even with these expenditures this loss of $1,493.07 has since been reduced to less than $400. When the delinquent list is further reduced, this loss will be wiped out entirely.

The total cash assets of the Association, including the cash surrender value of the Nicholson policy, now amount to $22,824.74. Six years ago the Association was broke.

In closing I want to take this opportunity to express my keen appreciation to Dr. MacGregor, Dr. Hoge and every member of this association for the fine cöoperation and the whole-hearted support given to the Association and to my office work during the past year. This has been an eventful year, crowded with some meritorious achievements and some disappointments. Considering the strife and conflict in every form of endeavor during the past 12 months, I feel that our year has been quite successful. My greatest hope is that I have served you and will continue to serve you, to the best of my ability and to your satisfaction.

Respectfully submitted,

JOE W. SAVAGE,
Executive Secretary.

COMMITTEE REPORTS

REPORT OF THE COMMITTEE ON MEDICAL ECONOMICS

One matter was referred to us during the year, —namely, the report of Dr. M. N. Newquist, a representative of the American College of Surgeons, who had previously been employed by the Council to make a survey of industrial surgery in West Virginia.

This report was studied in detail by us, and our report submitted to the Council on December 30th. That report covered four points: 1. Miners Hospitals. 2. Hospitals for the treatment of insane, for the treatment of tuberculosis, and the School for the Deaf and Blind at Romney. 3. Contract Work. 4. Workmen's Compensation. On the first three items your committee was in accord; on the fourth item majority and minority reports were submitted. Copy of our report to the Council is attached hereto.

Your Committee has made careful study of Dr. Newquist's report submitted to us by you, December 13th, and beg to make the following recommendations:

1: *Miners Hospitals.*

We believe that the so-called Miners Hospitals, Nos. 1, 2, and 3, located at Fairmont, at Welch and at McKendree, are at present serving no useful purpose and ought to be closed. We do not believe it is desirable that any one of these hospitals be converted for the care of crippled children, or for other special hospitalization. We believe that these special problems can be better cared for in the regular hospitals in various sections of the state.

2: *Hospitals for the treatment of insane, for the treatment of tuberculosis, and the School for the Deaf and Blind at Romney.*

We believe that all these hospitals and this school should be operated under direct control of the State Health Department. We believe that the hospitals for the treatment of insane should be re-organized, so that one of these four hospitals shall be designated and used as a receiving hospital. We believe that

this hospital should be equipped and staffed for purposes of diagnosis and classification, and that the remaining three hospitals, or such of them as are needed, be used either for special treatment or for custody of incurably insane persons. We recommend that the Department of Crippled Children be transferred to the State Health Department.

3: *Contract Work.*

Your Committee believes under certain local conditions list hospitals, working under payroll deduction plan, are permissible. We believe also that owing to certain abuses of this practice, the State Health Department should be given authority to inspect and to classify all hospitals as to equipment, personnel and general efficiency. Your Committee calls attention to and is in accord with the statement from Dr. Newquist's report, which is as follows: "The employees and the medical profession have no basis for protest over the fact that the doctor is placed upon a salary basis, but they are justified in their demand that the money collected for medical purposes be so expended." Your Committee is also advised that one employer in the state makes payroll deductions from employees to cover only industrial accidents. This practice we believe is objectionable and ought to be discontinued.

4: *Compensation Commission.*

On this subject, your Committee is divided in opinion. Majority and minority reports will be submitted.

Respectfully submitted,
R. H. WALKER,
W. S. FULTON,
J. ROSS HUNTER,
C. R. OGDEN,
W. H. ST. CLAIR.

Minority Report

We do not believe that the West Virginia Medical Society should advocate the payment of all bills for industrial injuries through the Compensation Commissioner. We have a right to demand that we be adequately compensated for this work, and that surgeons and hospitals doing this work, be competent and properly equipped. In making these demands we are entirely within our field of interest, and our advice is likely to be accepted. The manner in which these bills are paid is, we believe, not a question of medicine but of economics, and one in which the industries have a right to be heard.

Respectfully submitted,
W. H. ST. CLAIR,
J. ROSS HUNTER.

Majority Report

We believe that all industrial injuries should be paid for through the Compensation Department, and should be separate and distinct from payroll deductions.

Respectfully submitted,
R. H. WALKER,
W. S. FULTON,
C. R. OGDEN.

COMMITTEE ON PUBLICATION

As Chairman of your Publication Committee, it again becomes my duty to report to you the activities of your Committee during the past year.

There is little out of the usual to report to you. During the year we have endeavored to improve the physical makeup of your JOURNAL, and render it a somewhat more attractive publication. We trust that such changes as have been made meet with your approval.

It has been the effort of your Committee, during the year, to maintain the same high standard of material in the reading pages of the JOURNAL, as in the past. Your Committee feels that in this respect the JOURNAL of our Association has no reason to feel embarrassed in comparison to the JOURNALS of other Associations. Your Committee has, during the year, received a number of commendatory letters regarding the contents, physical makeup, and so on of your publication.

The Committee feels highly gratified to be able to report to you that even during this period of depression the JOURNAL shows a profit up to May 1, 1933, since the last annual report, of $1,150.86. We feel that this is particularly gratifying in view of the economic situation and the condition in the advertising field, which has existed.

The actual cash balance as of May 1, 1933, is $6,367.55, as against a balance of May 1, 1932, of $6,716.69. At first glance this is a loss of some $350.00, approximately. Your Committee would call your attention, however, to the fact that at the meeting of the Council to discuss the question of having a survey of the profession of the state made, your Publication Committee proffered a loan of $1500 to the general association from the JOURNAL funds to defray the expense of the Newquist survey.

If this $1500 is considered as it should be, a portion of the JOURNAL's separate fund, you will note that the balance at this time, that is May 1, 1933, would be $7,867.55. A gratifying thing to your Committee.

During the year the Publication Committee has worked in complete harmony, and your Chairman wishes to express to the other members of the Committee his appreciation of the assistance given to him in a number of instances where a question of policy came up.

The entire Committee wishes to take this opportunity to express to you their appreciation of the continued efforts, of the Business Manager of the JOURNAL, Mr. Joe W. Savage, in securing new advertising, holding old advertising, and for the satisfactory manner in which he has carried out the business management of the publication.

If it is the pleasure of the Council to continue the present Publication Committee, the chairman wishes to assure the Council and House of Delegates that it will be their continued effort to give the very best we have in us to continue improvement in your publication.

Respectfully submitted,
JAS. R. BLOSS, Chairman.

THE PUBLIC POLICY AND LEGISLATIVE COMMITTEE

The Public Policy and Legislative Committee begs to submit the following report:

Our feelings have been aroused by the very general discussion of medical service in all its phases, and the costs of this service.

It has seemed to be the attitude of various people that the public has a proprietary right to the labor of the doctor, and they have been seeking ways and means to control our profession both as regards assignment of work, and the compensation for same.

An increasing number of companies doing business in West Virginia deduct from the payrolls of their employees to the extent of several hundred dollars per month and hire young physicians to do their medical service for fifty percent more or less of the check-off. Just now there is a test case in court brought there to determine whether corporations may practice medicine and retain profits over and above the cost of the service rendered.

Stock companies have sprung up almost everywhere proposing to render medical and hospital service for two or three dollars per month payable like industrial insurance premiums. The control of these companies in many cases is entirely outside our profession. If they are allowed to prosper there may come a time when most doctors will be working for these lay organizations in the same way the contract doctors are now on salary under orders from corporations.

In Charleston we have Hospital Service, Inc. entirely under the control of our profession which seems able to combat the inroads of commercial stock companies. All hospitals of this area cöoperate in this service, and it will be a success if our leadership is strong enough.

At the Association council meeting in December, 1932, it was agreed to sponsor three different legislative measures. They were as follows:

1. A bill to abolish the three miners' hospitals.
2. A bill to amend the compensation law so that employees injured in industrial accidents would not have to pay their medical and hospital bills through "list" practice.
3. A bill to give the West Virginia public health council medical supervision of the state institutions caring for the sick.

The first efforts of the Association were directed toward the abolition of the miner's hospitals. Several weeks were devoted to ground work and the plan to sponsor the "abolisher" bill was abandoned when it appeared that such a measure would have practically no chance of passing. A canvass of practically the entire house showed the sentiment largely against this measure because of the economic depression. It was pointed out time and time again that the miner's hospitals were really serving a useful purpose at the present time by rendering care and hospitalization to indigent persons who could not otherwise be taken care of. If these hospitals are not eliminated in the coming budget bill, we feel that our work this year will aid materially in favorable consideration of a similar measure in 1935.

While we were working on the miner's hospital bill, a measure was introduced in the legislature which provided for the elimination of a number of abuses in the compensation department. Among other things, this bill contained the provision in which we were so vitally interested. The bill went to the Judiciary committee. Early in February we secured a hearing at which time the bill was supported by Dr. MacGregor, Dr. Albert H. Hoge, and Dr. R. H. Walker who appeared for the Committee. No action was taken by the Judiciary committee until late in the session, when the bill was finally reported favorably to the House and placed on the calendar. Here it remained until the session ended.

The Medical Supervision Bill (House Bill 179) was introduced first in the senate where it met with strenuous opposition from the state board of control. This opposition succeeded in holding the bill up for about five days, before we finally put it through the

senate. It then went to the house just three days before the session ended. This bill was placed immediately upon the special house calendar by the legislative leaders but there was not sufficient time to bring it before the house for passage in its regular order. On the last day of the session we succeeded in hringing the bill up out of its regular order and moved to suspend the rules in an effort to get it through. A four-fifths majority was needed for this maneuver to be successful. The vote was two to one in favor of the bill, but the four-fifths majority was lacking so the bill died with the house adjournment that night. Had this bill been introduced earlier in the session it would have had no trouble in getting through. It was not introduced for two reasons. First, we knew that Governor Conley would veto it and so we waited until almost the beginning of Governor Kump's term. Second, we had to take up the Association's legislative program one thing at a time and we did not get around to the supervision bill until about the middle of February.

Among the unfavorable bills introduced in the legislature and opposed by the Association were the following:

The Faith Healing bill, upon which we had our hardest fight of all. This was the usual bill sponsored at each session by the Christian Science church to exempt all who treat the sick by prayer from the provisions of the medical practice act. This bill has already heen enacted into law by more than 40 states and it had a considerable following in both branches of our legislature. The sponsors of the bill had one lobbyist who remained on the job throughout the session and, at various times, other memhers of the Christian Science church were at work. The hill was held in committee as long as possible, until a hearing was finally demanded. A number of local doctors appeared with the committee to oppose the measure and at the conclusion of the hearing, further consideration of the bill was indefinitely postponed. A last minute attempt on the floor of the house to recall the bill from committee failed. We are pleased to report that our fellow member, Dr. E. E. Watson of Preston County, won five dollars from one of the sponsors of the hill when it failed to get through.

House Bill 99, introduced on January 19. A bill to set a limit of $15 on doctors' fees in maternity cases. Indefinitely postponed in committee.

House Bill 451, introduced February 28. A bill to require physicians to furnish patients with x-ray copies at $2 per plate. Held in committee.

House Bill 536, introduced March 1. A bill to license midwives without examination upon the recommendation of two reputable citizens. Held in committee.

House Bill 128, to create a board of barber and beautician examiners and to regulate practice of barbering and beauty culture. Killed in senate.

Other bills considered by the committees on medicine and sanitation included the following:

Senate Bill 18, to amend the chiropody practice act by raising the academic requirements to four years of high school work. Passed the senate but failed in the house.

House Bill 158, proposing that every child entering a public or private school for the first time be examined by a licensed physician. Passed the house but failed to reach a vote in the senate.

House Bill 248, requiring that a health certificate be obtained before marriage. Passed the house but failed to reach a vote in the senate.

House Bill 403, providing for compensation for disability or death resulting from silicosis. Failed to pass the house.

All of the last named hills were watched with considerable interest but no action was taken either to assist or retard their passage.

All doctors engaged in public health work will be interested to hear of the passage of House Bill 458, providing for the appointment of a dentist to serve on the public health council in an advisory capacity. This bill was presented to the Association before it was introduced and was sponsored by the state dental society when the Association offered no objection to the hill. The dental advisor will have no connection with the examining hoard, but will sit in on public health questions pertaining to oral hygiene.

Our State Secretary is responsible for most of this report, and he was very faithful in attendance at the legislature. We must always have some one in attendance at the legislative sessions, hecause it is more and more apparent that eternal vigilance is the price of professional independence.

AUDITOR'S REPORT

To the Council,
West Virginia State Medical Association,
Charleston, West Virginia.

GENTLEMEN:

Pursuant to my engagement, I have audited the

receipts and disbursements of the several accounts of the West Virginia State Medical Association covering the fiscal year ended May 1, 1933. Beginning with the balances as set forth in my audit for the preceeding year, I have made test varifications of all receipts, examined cancelled vouchers covering all disbursements, reconciled balances in banks with statements from the depositories and inspected the securities held in the Indigent and MEDICAL JOURNAL accounts.

About January 1, 1933, Dr. Barber, Treasurer, transferred the account books, records and funds then in his custody to Mr. Savage. These transfers were ascertained to have been made properly and all books and records for the period under review were in the usually good order.

By reference to the next following page, it will be noted there was a total income from all sources in the amount of $14,575.79, total disbursements in the amount of $16,068.86 and a balance in cash and securities at the end of the period of $18,499.74. The balance was decreased $1,493.07 during the fiscal year but this decrease takes into account a loan made to American College of Surgeons for the Newquist Survey in the amount of $1,500.00 and payment of the premium on Dr. Nicholson's life insurance in the amount of $1,301.00. The cash surrender value of this insurance is now $4,325.00.

Mr. Savage's surety bond has been $10,000 heretofore. Since the funds formerly in the custody of Dr. Barber have been transferred to Mr. Savage, the bond should now be approximately equivalent to the funds under his control. I would suggest that this bond be increased to $20.000.

COMBINED STATEMENT OF RECEIPTS AND DISBURSEMENTS AFTER ELIMINATING INTER-ACCOUNT TRANSFERS

FISCAL YEAR ENDED MAY 1, 1933

Balances brought forward May 1, 1932:		
General Fund	$ 5,562.46	
Medical Journal Account	6,716.69	
Indigent Fund	6,020.85	
Medical Defense Fund	1,429.86	
Convention Fund	262.95	19,992.81
Receipts		
Dues	$ 8,463.50	
Advertising	4,955.20	
Interest on Savings Accounts	97.09	
Interest on Bonds	195.00	
Commercial Exhibits	860.00	
Miscellaneous	5.00	14,575.79
		$34,568.60
Disbursements		
General Funds Account	$ 7,700.52	
Medical Journal Account	5,304.34	
Indigent Funds Account	1,601.06	
Medical Defense Funds Account	700.02	
Convention Funds Account	762.92	16,068.86
BALANCES MAY 1, 1933:		
General Fund	$ 4,738.41	
Medical Journal Account	6,367.55	
Indigent Fund	4,964.09	
Medical Defense Fund	2,069.66	
Convention Fund	360.03	$18,499.74

GENERAL FUND

Balance brought forward May 1, 1932			$ 5,562.46
Receipts			
Dues		$ 8,463.50	
Interest on Savings Account		3.47	
Old Water Cooler Sold		5.00	
		$ 8,471.97	
Loan from Medical Defense Fund		1,500.00	9,971.97
			$15,534.43
Disbursements			
Salary of Executive Secretary		$ 4,200.00	
Office Salaries		1,158.25	
Office and Library Rent		480.00	
Office Supplies and Expense		249.37	
Library Expense		92.18	
Telephone and Telegraph		195.04	
Postage		305.00	
Traveling Expense		285.09	
Convention Expense		200.56	
Surety Bonds		100.00	
Treasurer's Salary		50.00	
Legal Expense		100.00	
Miscellaneous Unclassified		285.03	
		$ 7,700.52	
Transfers:			
Indigent Fund	$ 315.25		
Medical Defense Fund	280.25		
Loan Repaid—Medical Defense Fund	2,500.00	3,096.50	10,796.02
BALANCE MAY 1, 1933:			
Charleston National Bank:			
Secretary's Account		$ 385.53	
General Account		4,352.88	$ 4,738.41

WEST VIRGINIA MEDICAL JOURNAL ACCOUNT

BALANCE MAY 1, 1932		$ 6,716.69
Receipts		
Advertising	$ 5,667.55	
Less - Discounts	712.35	4,955.20
		$11,671.89

Disbursements

Printing	$ 3,500.00		
Less - Discounts	69.90	3,430.10	
Engraving	122.12		
Less - Discounts	12.14	109.98	
Postage		134.00	
American College of Surgeons—Newquist Survey		1,500.00	
Traveling Expense		62.50	
Auto Emblems		45.70	
Miscellaneous Unclassified		22.06	5,304.34
BALANCES MAY 1, 1933:			
Charleston National Bank		$ 973.24	
United States Treasury Bonds	$ 5,711.50		
Less Sale	1,031.79		
Balance ($4,700 par value)		4,679.71	
Annuity Contract with Fidelity Investment Association	358.20		
Payments this period	356.40	714.60	$ 6,367.55

INDIGENT FUND

Balance brought forward May 1, 1932		$ 6,020.85
Receipts		
Bond Interest	$ 195.00	
Interest on Savings Account	34.05	
	$ 229.05	
Transferred from General Funds	315.25	544.30
		$ 6,565.15
Disbursements		
Annual Premium for Insurance on Life of Dr. Hugh G. Nicholson	$ 1,301.00*	
Mrs. S. A. Daniel	300.00	
Federal Check Tax	.06	1,601.06
BALANCE MAY 1, 1933:		
Charleston National Bank—Saving Account No. 46,433	$ 848.76	
Federal Land Bank Bonds—($4,500 par value)	4,115.33	$ 4,964.09

*Cash surrender value of life insurance $4,325.00

MEDICAL DEFENSE FUND

Balance brought forward May 1, 1932		$ 1,429.86
Receipts		
Interest on Savings Account	$ 59.57	
Transferred from General Fund	280.25	
Loan to General Fund Repaid	2,500.00	2,839.82
		$ 4,269.68
Disbursements		
Cabell County Medical Society—Allowance in the case of Sloan vs. Mitchell	$ 500.00	
Dr. J. S. Skaggs	100.00	
Dr. Edward M. Phillips	100.00	
Federal Check Tax	.02	
	$ 700.02	
Loan to General Fund—November 9, 1932	1,500.00	2,200.02
BALANCE MAY 1, 1933:		
Charleston National Bank—Savings Account No. 40,000		$ 2,069.66

CONVENTION FUND

Balance brought forward May 1, 1932		$ 262.95
Receipts		
Receipts		860.00
		$ 1,122.95
Disbursements		
Joe W. Savage, Travel Expense Parkersburg	$ 5.00	
Joe W. Savage, Travel Expense New Orleans	62.50	
Chancellor Hotel, Conference Luncheons	9.10	
J. M. Gates Sons Company, Sign Cloth	1.25	
Dr. Mark Fisher, Golf Trophies	30.00	
Joe W. Savage, Travel Expense Parkersburg	5.00	
Joe W. Savage, Petty Cash	25.00	
Parkersburg Mill Company, Booth Lumber	16.87	
Chancellor Hotel, Account	172.49	
Dr. V. W. Fishback, Travel Expense Cincinnati	15.00	
Mrs. M. K. Tingley, Convention Registration	15.00	
Dr. A. C. Mitchell, Travel Expense Cincinnati	31.12	
Dr. S. G. Gant, Travel Expense New York	58.02	
A. M. Moore, Hostess, Dance, etc.	21.40	
Woodyard Commercial Printers, Tickets, Cards, etc.	79.87	
Charleston Theatre Supply Co., Rent Stereoptican	3.00	
Dr. Henry H. Kessler, Travel Expense Newark	58.25	
Dr. Dean Lewis, Travel Expense Baltimore	17.93	
Dr. B. H. Nichols, Travel Expense Cleveland	25.74	
Dr. Mont Reid, Travel Expense Cincinnati	20.00	
J. W. Dudley Sons Co., Banquet Roses	20.00	
Parkersburg Country Club, Ball Room	60.00	
Margaret Davis, Stenographic	5.00	
Joe W. Savage, Travel Expense Parkersburg	5.00	
Federal Check Tax	.38	762.92
BALANCE MAY 1, 1933:		
Capital City Bank		$ 360.03

The West Virginia Medical Journal

Directed and Edited by the Committee on Publication

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PREVENTIVE MEDICINE FROM THE FAMILY PHYSICIAN*

By HENRY F. VAUGHAN, D.Ph.
Commissioner of Health
Detroit, Michigan

THE PROGRAM IN DETROIT:—Six years ago there was initiated in Detroit a program to secure the active participation of the practicing physician in providing preventive medical services to the public. The ultimate objective is to have the family physician take care of his clientele in health as well as in time of illness. We believe that in case of illness the physician is better able to serve his patient if he has complete understanding of the patient's mental and physical characteristics. Another objective of the plan is to reeducate the public to look to the physician in private practice for such preventive services as diphtheria protection, smallpox vaccination and periodic health examinations rather than to depend upon public agencies and free clinics. We firmly believe in the principles of individualism. We oppose the paternalistic tendency of government to assume the burden which the individual should accept as his own. People must be taught that preventive medical services constitute a purchasable commodity, an investment which yields generous returns. The willingness with which the public accepts such services will determine the individual's future health status.

There are many public health administrators who feel that certain medical services which in the past have been provided by health organizations, both official and nonofficial, should be gradually transferred to the physician in his own office. They believe that such a program will broaden the influence of the health organization, will multiply the opportunities for health education and will result in the conservation of both life and money. The office of every prepared physician should in fact become a health center from which will be dispensed not only knowledge regarding the prevention of disease but service which under any circumstances is available only at the hands of the qualified physician. A community has but one health officer. There may be thousands of practicing physicians, each one of whom should become an agent or deputy of the health department.

It is common to most communities to find a certain degree of suspicion and antagonism which has developed between the county medical society and the health department.

*Read before the West Virginia State Medical Association at Charleston, May 24, 1933.

The former frowns upon the real or mythical inroad of socialized and state medicine and yet fails to provide a suitable substitute. Plans and suggestions may be proposed but rarely are these executed. The medical society has neither the funds nor the personnel equipped to carry on a community health service. On the other hand the health department has too frequently overlooked the viewpoint of the practicing physician, has allowed his organization to develop so as to interfere with the private prerogatives of the physician and in some instances has enticed into free clinics individuals who can well afford to pay the family physician for his service. There is need of a more common understanding between the organized medical profession and the local health agency, both of which have a similar purpose, the preservation and conservation of human life. In Detroit, during the past six years, the County Medical Society and the Health Department have pooled their resources and have teamed up to solve the problem which is of mutual concern.

While it is true that the work which has been carried on in Detroit has become known in connection with the campaigns to prevent diphtheria, we wish to emphasize that this is not the principal objective of the program. The real purpose is to secure the active participation of every qualified and prepared physician in the practice of preventive medicine. When the plan was established some six years ago by a committee of the East Side Medical Society and later became a project of the Wayne County Medical Society, it was wisely determined that instead of endeavoring to transfer overnight all preventive medical services to the family or cöoperating physician we would begin with diphtheria protection as our immediate objective. Such a program can readily be isolated from other preventive services; it is an entity within itself.

One should understand from the outset that no one interested in this plan has at any time contemplated demolishing the public health department or in any manner weakening such organization. Those who assume that the practice of preventive services in the physician's office warrants the curtailment of funds to the Health Department, are bound to be disappointed. Likewise, if the Health Department withdraws either voluntarily or forcibly, from the cöoperative plan, disaster will result. The two groups, the medical profession and the health agency must work together and recognize that they have a common interest in the promotion of positive health, the prevention of disease and in service to the public, and more especially the growing child.

Few, if any, medical societies are administratively organized or sufficiently well financed to carry on the mechanics of this program without the wholehearted and continuous assistance of the Health Department. The latter must be aggressive and serve as a stimulative influence, but every step in the program should receive the approval of the appropriate committees and the Council of the Medical Society. Such society must actually participate in the plan and assume its share in the direction of the program. We will assume therefore that we have in the community not only an alert and health-conscious Medical Society, but a well-organized public health service with full-time, well-trained personnel, with reasonable financial support, and a willingness on the part of each of these agencies to work together.

The recent report of the Committee on the Costs of Medical Care affords, to a certain extent, an opportunity to compare the so-called Detroit Plan with the recommendations of this Committee, although the Detroit enterprise was actually initiated a year before the Committee on the Costs of Medical Care was appointed.

The Detroit Plan is a group plan—the group in this instance being the organized medical society (or the organized dental profession).

Contrary to the experience of socialized medicine in European countries, the medical profession becomes the organizer and leader in the program. The group consists of all physicians in the community who are willing

to lend their support to the program as outlined by the County Medical Society. The group need not consist of all members of the medical society, nor need it be restricted to those who are members. It must, however, include all who have prepared themselves to participate in the general program and who are willing to subordinate their personal views to that of group judgment. Instead of being built about a unit or community health service constructed around a clinic or hospital center where a small group of physicians have joined their common interests and purposes, this plan is supervised by a large group of cöoperating physicians. The foundation of the program rests upon the shoulders of the family physician who becomes the unit on which medical practice is constructed.

The plan does not involve any insurance scheme, but does provide for a reasonable honorarium to physicians who serve in their own offices such individuals who because of financial conditions are unable to pay the physician direct. Funds for this purpose are taken from taxes, and a regular item for the payment of physicians appears in the budget of the Health Department.

The Committee on the Costs of Medical Care has recommended the expansion of preventive medical services and the support of health departments. The Detroit plan is based primarily upon a program of preventive medicine. It is felt that this offers the unique opportunity of expanding the effective service of the family physician in the field of health education, protection against certain diseases, the discovery and removal of physical and mental handicaps and, ultimately, a new viewpoint on the part of the citizen toward the value of these services. Individuals should be taught to turn to the family medical counsellor for advice for conserving health and preventing the inroad of unnecessary and debilitating sickness. The plan should stimulate parental responsibility for the welfare of the family, teach the individual that health is a purchasable commodity, and that within reasonable limitations the responsible head of the family can determine the future health of the members of his own household.

Preparation of the Medical Profession: —Before a group project is initiated, as for example the effort to secure the protection of young chlidren and infants against diphtheria, it is essential that the medical profession should be thoroughly prepared. We are reminded of a conversation which occurred with a Detroit physician four or five years ago. He stated that he did not believe in the treatment of diphtheria with antitoxin. He used his own chemical formula. The services of a laboratory were offered to demonstrate the efficacy of antitoxin. The selection of three groups of guinea pigs, one to be used as a control and the other two groups to be inoculated with the Klebs-Loeffler bacillus. One group with diphtheria would be treated with the chemical formula, the other with antitoxin and the results observed. Even this generous offer was not accepted and the physician still insisted that he knew whereof he spoke. In despair we inquired as to when he graduated in medicine and the reply was that he finished his medical course in 1890. He had graduated about three years before Roux had announced the discovery of antitoxin and this physician had unfortunately not progressed since the days of his medical school. He still practiced the medicine of the vintage of 1890, and apparently had made no effort to reconstruct his habits in terms of 1933 knowledge. This physician, fortunately, does not constitute the rule but rather the exception; but it is the exception to any rule which so frequently causes disaster. The public is not able in every case to intelligently differentiate between the antiquated and the modern practitioner of medicine. If the health department were to broadcast a program urging parents to take their children to the family physician for such a service as immunization against diphtheria, and the physicians at large had not been prepared, only disaster would result. We admit that at the beginning of our study there were a few physicians who did not know the difference between antitoxin and toxin-antitoxin. There were many who were not familiar with

the technic of the Schick test. Our first effort was therefore directed toward the preparation of the physician.

There is no particular difficulty in securing the cöoperation in a group program of these physicians who attend with regularity the meetings of the County Medical Society or the meetings of the smaller district societies or those who are attached to the various hospital staffs. There are others who are wont never to attend professional meetings of any character.

At the very beginning there were instituted post-graduate conferences in communicable disease control. These meetings were held each year during the winter months on Wednesday mornings, from ten to eleven, in the auditorium of the Herman Kiefer Hospital, the institution in which we house our communicable diseases. These conferences have been built around the physicians' interest in clinical medicine, the differential diagnoses, the portrayal of interesting clinical cases—but every opportunity is seized to expand the interest in the program of preventive medicine. The Schick test was demonstrated time and time again, not only in these conferences, but in the meetings of the district societies and in small neighborhood groups arranged for certain physicians. The attendance at these post-graduate conferences has run from 100 to 300 doctors each week, and in a single series one-fourth of the membership of the Medical Society participated.

As the participation program expanded from diphtheria protection to periodic health examination, tuberculosis case finding, and the control and treatment of venereal diseases, each one of these subjects was carefully reviewed in the post-graduate conferences. It would be a mistake to proceed with public education without first preparing the physician in each field of endeavor. This is essential for two reasons: first, to bring up to date the physician who has not kept up with the times, and, secondly, to prepare all physicians so that they may fit themselves into the group plan.

So far as possible one physician has been chosen to present a complete series of post-graduate lectures. Those on communicable diseases have been given by Dr. John E. Gordon and his associates. Those on tuberculosis by Dr. H. S. Willis, Dr. Henry D. Chadwick and their associates. This assures a certain degree of continuity in the lectures and avoids repetition. An effort has been made also to make the subject matter of timely interest. When poliomyelitis was prevalent two or three lectures were built around this subject. Scarlet fever and diphtheria were discussed at a time just preceding their high incidence. The author has in each case prepared his text in advance, although at the time he delivers his lecture he does not read the text. After the lecure each physician is provided with a mimeographed copy and thus at the end of the year he has the complete text. Many have been bound for permanent reference. A list of the physicians attending the lectures has been kept, so that we have full knowledge regarding the interest of the cöoperating physician.

It has not been an uncommon practice in recent years for health agencies to introduce new projects into a community, the success of which depends upon services which must be rendered by physicians and dentists, without first presenting the entire program in all its aspects to the profession itself. The apparent lethargy or lack of cöoperation on the part of physicians may be due to no small extent to the fact that no effort has been made to stimulate their interest or gain their confidence. An occasional address before the fractional part of the profession which attends a medical society meeting will not suffice. There must be energetically pursued a program to reach the majority of physicians in that area.

For the Detroit diphtheria prevention program there has been built up a group of 1100 cöoperating physicians. Eliminating the obstreticians, surgeons and other specialists who would not be interested in such a project, we believe that fully 80 per cent and possibly 90 per cent of the physicians have joined the group plan and are actually participating in the program. Through the organized County

Medical Society and the post-graduate conferences, we secured the cöoperation of 700 of these physicians. A letter was sent to every physician in the city, together with a Form of Agreement. This method of approach ultimately resulted in the agreement with the 700 physicians.

It was fully recognized that this would not suffice and that it would be essential to secure the cöoperation of such physicians as did not attend the medical meetings, many of whom probably never read the letter which was sent out under the joint auspices of the medical society and the Department of Health. We, therefore, employed a physician whom we termed our Medical Cöordinator, a part-time man who each morning visited several of the physicians from whom no reply had been received, but who were in general practice. In this way we reached the physicians who had probably not kept pace with modern trends in medicine, and those who might have been personally antagonistic to any endeavor on the part of either the County Medical Society or the Department of Health. The Medical Cöordinator spent half an hour with the newly contacted physician, first discussing his experiences with the Health Department, the possible inroad of state medicine into his practice, and in general endeavored to win the good will and interest of his new contact. Then the Cöordinator would carefully explain that the one effective substitute for socialized medicine is for every physician to prepare himself and to undertake the services which otherwise would be rendered by the State. Before he left the physician's office the Form of Agreement had been signed and in this way 400 additional names were added to the list of cöoperating physicians.

The Medical Cöordinator in addition to explaining the administrative details of the plan arranged small neighborhood group meetings for physicians. Here the administration of toxin-antitoxin was demonstrated and the reading of the Schick test was shown on groups of children prepared for this purpose.

In addition to this approach to the medical graduate, the story of medical participation has annually been carried to the medical students in their senior year. They have had their usual hospital and communicable disease training, but in addition to this there has been presented the entire program of medical participation much as it is outlined in these pages. Thus, when these students graduate they at once become a part of the group program.

Preparation of the Public:—After the physicians had been prepared collectively and individually, the problem resolved itself into a program of health education, to teach the parent the need for protecting his child against diphtheria. Under the conditions of the program which provided for no free immunization clinics, but did provide that all the work should be done in the physician's office, the problem was to create a responsibility in the parent's mind in order that he would take or send the child to the physician's office for the prophylactic treatment.

The educational program has been attacked in two ways: first, through popular health instruction; and, secondly, through individual health instruction. The method is well illustrated in the chart which will be found at the end of this outline. This chart also illustrates the various essentials and advantages of the program which we are discussing.

Popular health instruction involves the various procedures generally employed by health departments. The radio has been used to great advantage. The Health Department has for several years been assigned a fifteen-minute period each week on two of the leading broadcasting stations. The newspapers have been generous in their support with news articles, feature stories, and editorials. During the first two years of the program the Health Department purchased advertising space which it can do without criticism. Considerable suspicion might be aroused in the public mind if the physicians advertised their own services. The printed and spoken word have been used in every possible manner. There have been billboard advertisements, street car

and motorbus placards. Thousands of pieces of literature have been distributed through the schools and through the divisions of the Department of Health. The church organizations have cöoperated, especially in the Negro and Polish districts. Notices have been read from the pulpit and special addresses delivered at religious and social gatherings. Through the cöoperation of the milk dealers and the Dairy and Food Council, special leaflets have been distributed to the homes of the city by the milkman. Business organizations, Parent-Teacher Associations, and clubs of every character have been addressed.

Under the conditions of the program with the work being done in the physician's office, we met with only 20 per cent results. In other words, one mother in five was interested to the extent that she took her child, at seven or eight months of age, to the family physician or to one of the cöoperating physicians, and had the child protected against diphtheria. Twenty per cent protection will not suffice. Our goal is to have not less than 60 per cent of the pre-school children protected and, better yet, 50 per cent of infants protected by the time they are one year old.

To better the results we employed a program of individual health instruction, one which is common to most modern health departments but possibly has not been pursued quite as energetically elsewhere. The public health nurse has been made the contacting agent between the mother and the cöoprating physician. She has been especially trained as a conversationalist. She has been taught to sell the story of diphtheria protection. She has made it a project in every school room. She has made it a program for the Parent-Teacher Associations. What is more important, she has directed her efforts primarily toward the mother when the infant attains the age of six months. The efficiency rating for each individual nurse in the Detroit Department of Health, which has an important bearing on future advancement in position and salary, is based to some extent upon the results which the nurse is able to obtain in her diphtheria educational work. She receives a mark of merit for her accomplishment.

Individual health instruction wherein the nurse contacts the mother, for the most part in the latter's home, has increased the returns so that from 60 to 80 per cent of the children are receiving their protective treatments. The results seem to depend largely upon the intellectual background of the groups contacted. Special house-to-house canvassing is carried on in areas in which the percentage of children protected is low. The degree of protection has been determined in all sanitary areas of the city. A city-wide survey made during the summer of 1932 involving 250,000 families, indicated that 77 per cent of the school children, 43 per cent of the pre-school group and 25 per cent of infants between six months and one year of age had received at least one series of the immunizing agent. These figures agree very closely with the reports received from the cöoperating physicians which are described a little later in this outline.

The Form of Agreement:—The Form of Agreement in the diphtheria prevention program is with the County Medical Society and the Department of Health signed by each of the 1100 cöoperating physicians. It specifies that on certain days and at certain hours the cöoperating physician will perform a special preventive medical service for a predetermined price. The physician agrees at this time to give toxin-antitoxin or toxoid for $1.00 per treatment, if in the physician's judgment the parent can pay for the service. There is nothing in this Agreement which binds the cöoperating physician for any other time than that specified. The specialist or the pediatrician may charge his client any price he may choose at any other hour.

The physician also agrees that if the parent cannot pay for the service, he will protect the child, and the Health Department agrees to reimburse the physician at the rate of fifty cents for each service, or $1.50 for three doses. The Health Department also pays $1.00 for the Schick test which includes the reading of the results. There is every incen-

tive for the physician to charge the parent if he can pay, as the physician receives $1.00 instead of fifty cents for each service. On the other hand, there are many persons who have not learned that preventive medical service is something which can be purchased. They have learned to pay the physician or dentist for a pain in the stomach or an aching tooth, but they have not learned the value of paying to keep well. Consequently the cöoperating physicians have been liberal in their interpretation of the client's ability or willingness to pay for diphtheria immunization. As the program grows older there will be an increasing tendency for the individual to assume the financial responsibility. With free clinics the tendency is in the other direction.

One thing which too frequently keeps the layman away from the physician's office is the uncertainty of what the physician is going to do and how much he is going to charge. This is common to persons who are wealthy as well as to those who are nearly indigent. This Agreement immediately overcomes a very real obstacle. The health agency is able to continually broadcast to the public that there is a group of cöoperating physicians who have agreed to perform this service for $1.00 per treatment or for nothing in case the parent is financially embarrassed. Furthermore, they need have no fear of imposing upon the physician as the latter is paid an honorarium by the Health Department, a tax-supported agency. We believe that physicians should be paid for services to indigents. We believe that it is fair to charge a part of the cost of diphtheria protection against a program of health education. Remember that diphtheria protection is merely the immediate objective. The ultimate purpose is to carry the practice of preventive medicine into the office of every qualified physician.

List of Cöoperating Physicians:—A spot map was made of the office location of each of the 1100 cöoperating physicians. Where many offices were located in some central building, the physician was assigned to the area in which his residence is located. Such a map demonstrates effectively the extended influence of the health agency. In fact, there is virtually a health unit within a stone's throw of every residence. Each physician's office has become a health center to which the public is being referred for diphtheria protection, smallpox vaccination, a periodic health examination, and a search for the early case of tuberculosis. The proximity of the physician's office to the homes of the city, has increased materially the percentage of infants and pre-school children protected. It is easier to take a child at seven or eight months of age a block or two to a physician's office than it is to travel a greater distance to a central or district clinic. The parents are being trained to turn to the physician's office for health advice rather than to free clinics, or the corner drug store or the quack. These cöoperating physicians have agreed to abide by certain rules and regulations and to follow out a plan which they themselves have prepared through their County Medical Society in cöoperation with the Department of Health. The Health Department continues to supervise the work. As it is a party to the program it still has control over the conditions under which the work is performed. To all intents and purposes, then, the cöoperating physicians are rendering the services in Detroit as agents or deputies of the Department of Health. Office cards were presented to all cöoperating physicians, displayed in their waiting rooms, indicating that the Commissioner of Health had approved of the cöoperative plan. If a physician is found who does not follow the prescribed procedure his name is removed from the list.

The city was divided into twenty-seven districts, and for each district there was printed a list of the cöoperating physicians on which appears not only the name and address of the physician, but the hours at which he has agreed to render the service. Master lists are kept at the headquarters of the Wayne County Medical Society and at the Department of Health. Also, district lists are used to refer parents to coöperating physicians when there is no family physician of choice. They are carried by the public health nurses in their field work and are kept in the schools.

Follow-up of Infants:—When an infant reaches the age of six months, as indicated by the birth records at the Department of Health, a special letter is sent to the parent. This communication is written on an electrical typewriter which permits the insertion of the name of the child and gives the appearance of a personal communication. Before the letter is sent a final check is made against the death certificate in order to avoid any embarrassment. Within ten days or two weeks a public health nurse calls at the home and it is her obligation to persuade the mother to take the child to the physician. She visits each home as often as conditions require. She may have to make three or four return visits in order to produce results, but like the collector of past due debts, she is persistent until results are obtained.

Cost of Diphtheria Protection:—Some public health workers have criticized the Detroit program declaring that the cost is excessive. We frankly admit that per child protected against diphtheria, the unit cost of the plan of medical participation is about twice that of free clinics. However, we do not for one moment feel that it is fair to charge the entire cost to diphtheria protection. It is a charge against a program of medical participation and there are many by-products which are worth more than the immediate objective. The Health Department carries an item annually in its budget amounting to $1.00 per living birth with which to compensate physicians for service to indigents. For any community a rough estimate can thus be made by determining the number of living births. In normal economic times when such a program becomes more generally received by the public, there will be an increasing number of individuals who will willingly and gladly pay the physician for his work. This will further reduce the cost to the Health Department and the community. We prepared a chart which compares the cost of prevention with the cost of diphtheria to the City of Detroit from 1917 to 1932. The figures were prepared on a population rate basis. The chart showed the amount of money paid to physicians and for the purchase of the immunizing agent. There was a peak in 1926 during the period of free clinics. The curve then fell during the transition stage and reached two new high points in 1930 and 1931 during the period of medical participation. These two years were higher than normal years because of the number of preschool children who needed attention. In the future the load should be directly related to the birth rate, and as the latter declines the cost of immunization will be reduced.

We have figured out the amount of money spent by the Department of Health in hospitalizing approximately 50 per cent of the reported cases of diphtheria. These figures are not estimates but were taken directly from the records of the Herman Keifer Hospital. The cost has come down and furthermore, in only one year did the cost of prevention exceed the cost of hospitalization. In this year the cost of prevention was low compared with the previous cost of hospitalization. The support of the hospital represents an item in the budget of the Health Department. The saving over a period of years is quite obvious. We have considered the cost of treating the diphtheria cases that remained at home. The conservative estimate of $35.00 per case has been used. Observe how low is the cost of prevention when compared with the cost to the individual for the treatment of the disease.

We have compared the same cost of prevention with the cost of Health Department supervision, the salaries of physicians and nurses employed in diagnostic service and in the control of quarantine.

We have shown a comparison between the cost of prevention and the amount of money which the undertakers received for burying the children who died of diphtheria. The average cost of a child burial in Michigan is $118.00. It is higher in other states. In only two years did the preventive services cost more than the amount received by the undertakers.

The expenditures for hospitalization and for quarantine supervision come from the

Health Department budget. The amounts spent for home treatment and for burial come directly from the individual citizen. If these sums be added together a chart could be prepared which would show more strikingly the small cost of prevention when compared with the cost of the disease itself.

In these calculations no consideration has been given to the economic value of life, the cost of raising the child, providing food, shelter and clothing as well as education. There is no estimate for school days lost, both on the part of the patient and the quarantined contact. Should these items be added, we would see how insignificant is the cost of prevention.

It will be noted that we have not included the cost to the Health Department and thus to the community, of the educational program and the work of the public health nurses. We feel justified in pursuing this course, as the diphtheria prevention program is merely added to the routine duties of our Division of Health Education and to the daily routine of our public health nurses. This item is chargeable against a general program of health education and the promotion of community health service rather than to the one particular item of diphtheria prevention.

We have shown graphically how the Health Department has saved money. During the past three years the physicians of Detroit have lost $60,000.00 because of the reduction in the diphtheria death rate. During these same three years the physicians have been paid either by parents or by the Health Department $325,000.00 for their services. In other words, preventive medicine has paid the physician more than curative medicine in the ratio of five to one. The average cost of treating a case of diphtheria is $35.00. The average cost of prevention is $3.00. Therefore, the parent has gained in the ratio of more than ten to one.

The Advantages of the Program:—The first advantage of this plan insofar as the medical profession is concerned, is the restriction of the use of the free clinic. In the diphtheria prevention work it has been possible to abandon the free clinics. Detroit has had no free clinic for diphtheria immunization for more than four years. All the work has been carried on in the offices of the cöoperating physicians. The per cent of children protected compares favorably with that in communities in which free clinics have been employed. We are not of the opinion that we have anywhere nearly reached that stage where Health Department clinics for child welfare, prenatal, and school services and the control and treatment of the venereal diseases and tuberculosis can be closed. We would never subscribe to a program of drastic revolutionary character. We do, however, subscribe to a program of education and evolution whereby the need for the free clinic will be largely minimized. Clinics serve a useful purpose as teaching centers and as a means of demonstrating the efficacy of control procedure. We believe that much of the service now rendered to indigents in clinics and dispensaries can gradually be transferred to the prepared physician in his own office.

Secondly, there is an advantage to the medical profession in that this is a program directed toward the maintainance of health. The Committee on Costs of Medical Care have indicated that 98 per cent of the people are well on a given day and only 2 per cent are ill. To the medical profession there must be more satisfaction in serving those who are well and who in normal times are better able to pay the physician than when ill. We have already indicated the monetary value of the diphtheria prevention program to the physician.

Thirdly, this program encourages and maintains the cordial, personal relationship between the physician and client. The successful practice of medicine still depends upon intimate and sympathetic contact between the physician and patient. To endeavor to place this profession on the mechanical basis of the automotive industry would be unfortunate. To serve the individual to greatest advantage in case of illness the physician should be well acquainted with the physical and mental handicaps and attitudes of his client while in normal health.

A fourth advantage to the medical profession is that the physician is compensated for his service to indigents. Why should not the doctor be paid as well as the lawyer? If we find ourselves without funds and caught in the jaws of the law, the Court appoints a lawyer and the State pays his fee. Surely the physician is entitled to similar consideration.

The advantages of the Health Department and to the public must be obvious to all of us. The death rate has been reduced until in Detroit the diphtheria death rate in 1932 was but one-fifth of that which obtained before the plan was put into effect. The reduction in the cost of operating the health service has already been mentioned, as has the extension of the influence of the health agency by having a large number of health centers in physicians' offices scattered throughout the community. There is another very definite advantage to the Health Department which should be mentioned. The post-graduate conferences have encouraged the early diagnosis and treatment of communicable diseases. A greater percentage of cases of diphtheria and scarlet fever is being promptly reported. During a recent outbreak of poliomyelitis the physicians were all watchful for the early signs of this disease. In 50 per cent of the cases hospitalized no definite diagnosis of infantile paralysis was made. These cases were sent into the institution and referred to the specialist with the onset of the earliest suggesive symptoms. We believe that this procedure was instrumental in reducing the mortality.

The advantages which accrue to the public may be summarized briefly as (1) reduction of needless sickness; (2) reduction in the cost of medical care; (3) assurance of adequate medical care; (4) the distribution of cost, and (5) the stimulation of parental responsibility.

Records:—Each cöoperating physician is supplied with a record card which he can keep in his own office. In addition to this he is provided with post cards, one of which he mails to the Health Department for each series of toxin-antitoxin or toxoid treatments. He records the name, address, and age of the child, indicates the dates on which the treatments have been given, and signs his name and address. The same card is used to report Schick tests. We do not generally recommend the Schick test before immunization, but recommend that it be given approximately six months after the first series of treatments. The Schick material, as well as the toxin-antitoxin and toxoid and smallpox vaccine are kept in the culture stations of the Department of Health and are available to physicians without charge. Report cards are obtained by the physician at the same time and at the same place that he obtains the immunizing agent.

Experience indicates that physicians prefer to send their report to the Department of Health as soon as the service has been rendered. No payment is made to the physician until the record is complete. Most physicians present their bills monthly. We have found that physicians are not wont to tear off a perforated slip at the bottom of an examination blank, place it in an envelope, address it to the Medical Society or the Health Department and attach a postage stamp. They will, however, send in a report card which can be readily filled out by the office girl and dropped in the mail box. The Health Department pays the postage upon the receipt of the card. On the diphtheria report cards the parent or guardian signs his name in order to obviate any criticism on the part of the City Controller that payments may be made for individuals who have not been served.

Smallpox Prevention:—The program for diphtheria prevention has ben carried on as a study in an administrative procedure as much as an effort to protect against this one disease. Consequently, in extending the services to other phases of public health work we have purposely varied the procedure somewhat. We have been fortunate in having the wholehearted support of the City Administration in our diphtheria project, and the financial authorities have willingly appropriated funds for this purpose providing, of course, the end results would justify the expense.

In attacking the problem of smallpox pro-

tection, no provision has been made to compensate physicians for service to indigents. However, the cöoperating physicians have repeatedly been urged to educate their clients to the value of other health services. The Health Department through its diphtheria program has made many new contacts with physicians. The alert physician will take this opportunity of impressing upon the parent the need of vaccination for smallpox and the annual and regular health examination. The percentage of pre-school children vaccinated against smallpox by the family physician has increased from 22 to 43, and we believe that in most instances the physician has received additional compensation for this service. If he examines the patient for other departures from normal health, he will find tonsils, adenoids and other conditions which require his attention. The cöoperating physician has become, in fact, a health educator, and has thus greatly extended the influence of the health agency.

The Health Department has arranged to receive report cards from physicians indicating the vaccination status of the patient. Ten cents is paid for each report received. The agreement further provides that this small fee will not be paid unless the patient is vaccinated or revaccinated or has a scar that is less than five years old.

Periodic Health Examination:—The same program of post-graduate instruction has been carried on for the periodic health examination and for tuberculosis case finding. We feel that the tuberculosis case finding program should be part of the health examination. No funds are available at present to pay for health examinations for indigents. In the spring of 1932 under the impetus of the case finding program of the National Tuberculosis Association, there was built up a group of cöoperating physicians who agreed to give a health examination, a tuberculin test, and provide for an x-ray examination of the positive reactors. During the month of May, 1932, 5000 school children presented themselves to the offices of the cöoperating physicians for such service.

This program with certain modifications is being repeated in May, 1933. A letter was addressed to all physicians. Enclosed was a memo describing the form of procedure, and also a card on which the physician indicated his willingness to coöperate in the plan. Four hundred agreement cards have been received. To these physicians a second letter was addressed and there was enclosed a postal card on which the physician reports the results of the tuberculin test and the x-ray examination. The Health Department pays ten cents for each card. There was also enclosed a blank on which to report diagnosed cases of tuberculosis. The educational program has included the usual popular appeal through the radio, billboards, placards, newspaper articles, and more than 200 talks to Parent-Teacher groups. There have been distributed through the schools 300,000 copies of a notice to parents. The coöperating physicians have been provided with examinaion blanks which they keep in their own offices. This blank is designed not only for tuberculosis case finding, but for the periodic health examination.

Other Activities:—In July, 1932, the annual physical examination for food handlers was transferred to the cöoperating physicians, the Health Department closing its examination clinic, but continuing to operate its educational clinic to which all food handlers are required to come before they are given their permits.

In a small area of the city a program is under way to return the treatment of veneral disease cases to the office of cöoperating physicians.

Summary:—No attempt is being made to summarize this program in this memorandum, as the advantages and disadvantages have already been discussed briefly. We feel, however, that the underlying principles involved in this plan of medical participation are applicable to a program of curative as well as preventive medicine. In fact such application is being made in some communities. The principles can also be applied to industrial health service.

The program as outlined for Detroit has been applied to urban conditions. In three rural counties of southwestern Michigan the W. K. Kellogg Foundation is applying the same general principles to rural health practice. Well organized, full-time health services have been developed, but in each county the medical and dental societies are carrying on the essential professional services. In the country areas the only real difference is one of distance, and the W. K. Kellogg Foundation have overcome this handicap of distance by providing facilities for the cöoperating physicians in school buildings.

OTODYNIA: DIAGNOSIS AND TREATMENT*

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I AM very glad indeed to have this opportunity to discuss here in an open meeting something which we meet frequently in our daily work. The subject, otodynia, otalgia, or more properly speaking, earache, is of my own choosing, and was selected for several reasons, but mainly because it is a symptom entity on which we are called to express an opinion, to diagnose and to treat almost every day, and partly because there is a wide diversity of opinion in methods of treatment. This paper was not prepared with the thought of future publication, but was written as an intimate communique to you expressing my ideas and practices so that you may better understand the explanations and treatment given the patients whom you have so generously referred to me in the past.

In the eyes of the laity, small differences of professional opinion give birth to grave doubts and form indictments against the whole profession. Upon such misunderstandings flourish the ever advancing army of special cultists and pathies. Never was full cöoperation needed in medical circles more than it is today. My views are expressed herein, not with the purpose of forcing you to accept them but to open the subject for free discussion from which all of us should profit.

Pain in the middle ear is caused chiefly by the retention of secretions, simple mucous, serous, or purulent which exert a pressure upon the tympanic membrane. There is also more or less inflammation of the tissues of the membrane itself which augments the amount of the pain. It varies markedly, from a very light aching sensation, with or without throbbing, to the severest kind of persistent, sharp, lancinating and radiating pain.

With the bacteriology and micropathology we are not chiefly concerned as such are of interest only to specialists. While middle ear disease is the most frequent cause of earache there are many other factors to be considered. Some are not intimately related to the ear but by several ways of direct and indirect innervations the otalgia is localized within the ear. Accordingly, I have classified the diagnostic entities as extrinsic and intrinsic causes of otodynia.

B. *Classification of diagnostic causative agents according to anatomical location.*

1. Earache arising from within the ear or immediately adjacent to the ear.

2. Earache referred as pain arising from other sources.

1. *Causes of otodynia arising from the ear and its adjacent structures listed somewhat according to relative importance.*

Acute otitis media, catarrhal or suppurative
Acute mastoiditis
Furunculosis
Impacted cerumen
Foreign body in the meatus
Otitis externa, diffusa
Acute myringitis
Aural polypi
Abscesses of the auricle

*Read before the Barbour Randolph-Tucker County Medical Society, March 4, 1932.

Othematoma
Eczema of the meatus
Perichondritis
Otitis media neonatorum
Acute periostitis of the mastoid
Caries of the osseous external canal
Epithelioma of the auricle and external auditory meatus
Exostosis of the external meatus
Trauma of the membrana tympani
Telephone ear
Herpes zoster.

2. *Causes of earache, arising from other sources, commonly known as referred otalgia.*

Acute tonsillitis—peritonsillar abscess—peritonsillitis.
Epidemic parotitis
Dental Disease—caries, periodontitis, pulpitis and pericementitis, alveolar abscesses and pulp nodules.
Acute diffuse glossitis
Carcinoma of the tongue
Cancer of the larynx
Trigeminal neuralgia—sphenopalatine neuralgia
Innominate aneurysm
Chloroma
Sphenoidal sinusitis
Pharyngitis and adenoiditis
Temperomandibular arthritis
Erysipelas
Raynaud's disease
Postauricular lymphadenitis
Chilblains

It lies not within the scope of this presentation, nor could it be of much value to us, to attempt a differential diagnosis of the above listed points. However, before therapy can be intelligently applied it is essential to know what causes the pain and a knowledge of the existence of the more frequent etiological factors enables the examiner to determine quickly whether the cause lies within the ear or is in some nearby structure. An inspection of the nose and pharynx can be made rapidly with ease, and such constitutes too often the only means of eliminating or indicting the structures contained therein as the cause of the otodynia. It is not enough. Routine palpation of the mastoid region and cervical lymphatics as well as careful inspection of the auricle, external canal and membrana tympani should be a part of every physical examination, whether earache indicates local trouble or not.

To conduct such an examination one does not have to be an expert in otology or possess expensive apparatus. A reflecting mirror that can be used for a number of purposes, and a medium sized tubular speculum is all that is necessary. It is all very well and good to be able to differentiate the fine points in the anatomy of the drum membrane, such as the annulus, the umbo, the long and short processes of the malleus, the cone of light, and the anterior and posterior folds of the membrana flaccida. These serve a good purpose in the differentiation of middle ear diseases, which do not lie in the province of the family physician. If the pearly white color and the cone of light are visible to the examiner he can safely conclude that the cause of the trouble lies not within the middle ear. He not only will be able to exclude middle ear disease but will be saved the personal compromise of prescribing anodyne drops for an unseen and undiagnosed condition and may perhaps be saved the humiliation of later learning that a professional colleague relieved his patient's pain by removing impacted cerumen from the external canal. Of far greater importance than this is the fact that by simple inspection of the drum he oft-times will be able to detect serious disease that calls for immediate treatment, thus preventing long and dangerous complications. Whether he should refer or treat such patients himself depends on his experience, inclination, medical judgment and the availability of special services. If for any reason an inspection is not made it is much better to refer than to make a diagnosis.

An otoscopic examination of the ear is especially indicated in all infants and young children with a fever, because an elevation of temperature, while varying greatly, is the one constant symptom of acute otitis media, and the condition is relatively common. Babies with middle ear disease, although alarmingly ill, seldom cry hard as if in severe pain and almost never localize the pain to the ear by putting their hands to, or pulling the affected

ear. "Moreover", states Morse, "babies sick from any cause are very likely to wave the arms about, grab at their ears and pull their hair". Mastoid tenderness is impossible to elicit in infants and difficult to localize in children under 5 or 6 years of age. Babies and children with acute otitis media often refuse to take food, presumably because it hurts to swallow. This with the reflex symtoms that commonly accompany acute middle ear disease; of vomiting, rapid respirations, tenderness and rigidity of the neck, and not infrequently convulsions, may lead the unwary physician to diagnose acute gastritis, worms, intestinal influenza, dentition, pneumonia, and many times meningitis. A simple inspection with a speculum will oft-times prevent an erroneous diagnosis, unpleasant prognoses, and sleeplessness on the part of the physician.

Therapy.—Having determined that the cause of the earache lies within or without the ear the treatment is managed accordingly. For tonsillitis, peritonsillar abscess, and congestive rhinitis both local and general measures are indicated. For dental disease one does not hesitate to refer the case to a dental surgeon. Cases of carcinomata will cheerfully be referred to institutions having facilities for the care of such patients. Rare diseases, such as herpes zoster of the external canal and ear, hardly require any discussion here as they occur but once or twice in forty thousand hospital cases.

It having been determined by inspection that the otodynia arises from middle ear involvement an attempt at a differential diagnosis should be made. If the ear drum has merely lost its color, is bulging slightly in one quadrant only, pain is not too severe, hearing is markedly impaired, and the symptoms have arisen after exposure to cold the physician may be justified in temporizing by prescribing warm applications and analgesic drops. This is probably a catarrhal otitis media and a single attack of pain may be the last. Catheterization of the auditory tubes may increase the pain temporarily but often relieves the symptomatology. Under a watchful eye this condition is not apt to become dangerous.

On the other hand, if the pain is persistent, throbbing, lancinating, or merely a dull ache, accompanied by a marked redness and bulging of the membrana tympani, and the fever is of any degree, the process may be considered as a suppurative otitis media, and active measures are immediately indicated. Anodyne drops at this time are useless, are a waste of time that may be valuable in preventing mastoid or other complications, and subject the patient to a longer period of harrowing pain. It is frequently the expressed experience of many pediatricians and internists that ears that spontaneously rupture clear up just as rapidly with as few complications as those which are incised; but with such assertions I do not agree. Even if such contentions could be granted I see no point to subjecting parents to three or four nights of wakefulness with a howling youngster, or an adult patient to 24 or 48 hours of increasing misery while waiting for the promised break. Otologists agree that a tympanic empyema which has been timely and adequately evacuated by a relatively simple surgical procedure not only shows prompt relief but runs a much more benign course with fewer complications. Such involvements are properly called empyemas of the tympanic cavity rather than middle ear abscesses and the old adage "*ubi pus evacua*" applies as much here as elsewhere.

Where an anodyne is indicated one can do little better than to use the time honored mixture of phenol and glycerine. To this may be added cocain as in the following Rx.

Cocain hydrochlor.		
Phenol	aa gr. vi	.4
Glycerini	drams ii	8.

Sig. Warm and place 3 to 5 drops in aching ear.
Menthol may be used instead of cocain.

Oils should never be used. Aside from their capacity to retain heat a little longer than aqueous solutions they possess no virtue, are messy, obscure the field for further examination, hamper irrigation and perhaps provide an anærobic condition for the multiplication of such bacterial organisms. I never advise

the use of oils to soften ear wax; I much prefer to remove inspissated and impacted cerumen by lavage than by the use of a softening agent and instruments.

Much can be said of the relative advantages of the application of heat and cold. I prefer to regard the ice bag and the hot water bottle as both being applications of heat, the difference being a matter of dosage. Both have their uses, and often can be used as contrasts to advantage. The hot water bottle, electric pad, hot salt bag, warm air, warm douches, etc., cause a very grateful reaction on the part of the patient suffering from catarrhal otitis. However, I regard them as highly dangerous when applied to acute empyemas of the tympanic cavity. The increased congestion caused by the general application of heat increases the pressure of the purulent content of the tympanic space, increases the pain and increases the danger of mechanically spreading the infection to the epitympanic space, the antrum, and the mastoid cells.

When asked by anxious mothers about the use of the hot water bottle or the ice bag I usually reply, "Warm things in the ear; cold applications around the ear". This is a pretty safe rule to follow until a diagnosis is made. A warm solution of sodium bicarbonate, 1 teaspoonful to the cup of water, applied gently as a douche gives considerable relief in cases where active anodynes may not be indicated.

While it may be safe to temporize somewhat with a case of catarrhal otitis media, the difficulty in differential diagnosis in the early stage makes it almost imperative to incise every bulging drum membrane, and this should be done at the earliest possible moment. It certainly must not be neglected in cases of acute purulent middle ear disease, and in all cases of doubt, a myringotomy is the safest procedure. I have had little cause to worry about an incision once made. On the other hand, I have spent some anxious moments over an inadequate paracentesis or over my failure to incise the membrana tympani on account of parental objections or other reason (lack of reason).

This rather meticulous, although not especially difficult surgical procedure is properly termed a "myringotomy" and should be a true incision rather than a "paracentesis" which is merely a stab wound and for most cases not large enough to promote free drainage, the object of the treatment. It should be a long curved incision through the posterior quadrants of the membrane and should lie toward the periphery. Thus it will usually pass through the points of greatest bulging and allow dependent drainage. It is advisable to cut from below upward in order to take full advantage of the downward and backward extension of the membrane. Any small, sharp blade will accomplish the result if the incision can be made under direct observation. I sometimes use a Græfe cataract knife but usually have at my disposal an assembled instrument with an angled handle that allows much better vision. (Instruments demonstrated). For the practitioner who feels that a stab wound better suits his technique there is available an eardrum perforator with an angled blade so that a thrust makes a V shaped wound. This is a very good method in that a small flap is formed which does not tend to close too rapidly and usually is large enough for good drainage.

Myringotomies are extremely painful and, except for very young children, should not be attempted without an anesthetic, either local or general. In hospital practice, and when available, nitrous oxide anesthesia is ideal. For office and field use I employ ethyl chloride as a general inhalation anesthetic. In doing so I am not unmindful of the bad reputation of ethyl chloride for inhalation anesthesia, but feel that it is as safe as any general anesthetic for its purpose. I feel that this agent gained its ill reputation late in the last century when closed inhalation anesthesia was in its experimental stage, and when likewise ether-alcohol,-oxygen sequence anesthesia had not a few fatalities to its credit. When administered with a generous admixture of air borne oxygen, as it is when used with a simple mask or with a piece of gauze held lightly over the face with the hand, it is quite suitable

for the task. Induction is accomplished in less than a minute, anesthesia is complete and lasts for 60 or 90 seconds, time enough for the work to be done, and recovery is prompt. Occasionally there is more or less dizziness which lasts for a few moments and there may be some vomiting. Naturally, any contraindication to a general anesthetic contraindicates its use, and the patient's pulse and respirations should be noted before hand.

When the patient is old enough to cöoperate intelligently a local anesthetic is indicated and usually gives complete anesthesia. Bonain's mixture equal parts of crystalline cocain hydrochloride, menthol, and phenol is ideal for topical application. When warmed and placed against the drum by means of a small tightly wound cotton tampon, anesthesia becomes complete in ten or fifteen minutes. When the angry redness of the tissues has been supplanted by a whitish discoloration anesthesia has ensued. With this preparation there not only is visible evidence of anesthesia but it obviates the necessity of cleaning and sterilizing the canal and operative field beforehand.

After myringotomies, relief from pain is usually prompt. There is sometimes a pain that arises from the incision itself that may persist for an hour or more. Aspirin compounds, or even opiates may be required to alleviate this.

A word or two concerning the after care will not be amiss here. A free discharge of pus after myringotomy, especially when performed on the early acute stages is the exception rather than the rule. At first there is a hemorrhagic flow mixed with a serous or seropurulent exudate. This may not be profuse. A light cotton tampon inserted immediately after operation may be left in situ for a few hours or overnight. After that it should be removed and followed by irrigations as often as the purulent flow indicates. No purulent exudate should be left to dry upon the skin of the auricle or external canal for any length of time. The pus must not be allowed to coagulate within the canal. The dermatitis venenata or eczema that develops after an otorrhea is the result of poor toilet and presents a perplexing problem in itself. If douched freely and often this will not occur. Cotton wicks or tampons to serve as drains are in my opinion contraindicated. A light cotton pack may be placed in the auricle to prevent the soiling of clothes between irrigations but should not be retained after it becomes thoroughly soiled.

For the irrigations, water, sterilized by boiling, is sufficient. Saline, boric acid solutions, and weak solutions of bicarbonate of soda are good irrigants. I prefer the latter because it is less apt to irritate the delicate dermal lining of the canal. Alcohol, bichloride of mercury, chlorine liberating solutions, peroxide of hydrogen, and other more active agents are not advisable at this time. Please bear in mind that such may have their indications when treating chronic otorrheas. The ordinary all rubber ear and ulcer syringes are sufficient for this purpose. Forcible irrigations at this time should be guarded but it is far better to irrigate forcibly than not to douche at all. The danger of serious complications is greater from insufficient drainage prompted by coagulated or plugged canals with small perforations of the membrana tympani than it is with clean canals and a well drained, even irrigated, tympanic cavity.

Eczematoid eruptions, the unsightly, painful skin complications resulting from continual exposure to purulent exudates or chemical washes presents another difficult problem in treatment. Here again mild irrigating solutions should be used to clear away the crusts and accumulations of pus. The surfaces should always be dried thoroughly after each cleansing and a mild ointment, zinc oxide, aseptinol, calmitol, or whatever similar conditions warrant, is indicated. For the persistently weeping or heavily infected kinds the surface may be covered with a mixture of compound tincture of benzoin and bichloride of mercury. This is strongly antiseptic and forms a heavy protecting crust which must not be allowed to retain purulent exudates for more than two days.

We cannot here discuss the treatment of all conditions causing pain within the ear. But one other condition that should be mentioned because of its importance to the patient and concern it gives the physician is acute furunculosis. The local, oft-times multiple, circumscribed areas of inflammation and swelling produce a constant, sharp, lancinating pain out of all proportion to the seriousness of the pathology. I have yet to find a suitable method of therapy that gives the desired belief in the early stages. Deep incision to the bone has been recommended, even before suppuration is apparent. Local anodynes are not effective. Cresatin or carbolized tampons, using 10 or 12% phenol, are sometimes palliative. General hypnotics with heat in one form or another applied to the ear is perhaps the best routine. After suppuration a free incision and if possible, currettage, of the abscessed sac is indicated. This condition is one that presents quite a problem because it often is impossible to give the patient the one thing he seeks, relief from pain.

In modern medicine no discussion of treatment is complete without the inclusion of preventive measures. Earaches are not frequently encountered in patients with proper nasal and pharyngeal ventilation and drainage. One should not wait for repeated attacks of otitis media, whether catarrhal or purulent, before advising corrective measures, because a single attack may, and certainly repeated ones, will, leave permanent traces in diminished auditory acuity. When intranasal and pharyngeal obstruction are first observed their correction should be advised. Hypertrophied turbinates, nasal polypi, and especially deviated septa should be corrected as soon as possible. A question will be instantly raised in your minds about the wisdom of performing such operative measures in young adults and children, the groups primarily concerned in our discussion. We now advise intranasal surgery whenever indicated in children for the same indications as in the adult. Submucous resections should be done as early as the obstruction indicates in order that the growing youth may derive its benefits during his greatest developmental period.

Tonsillectomy and adenoidectomy, especially the adenoidectomy are indicated in very early years whenever the signs of obstruction are manifest. It is true that adenoids removed in infancy are prone to recur later, but better two operations than have the growing child suffer the effects of insufficient aeration. The optimum age for the removal of adenoids and tonsils is between 3½ and 4 years. By this time the child is well able to withstand the effects of the anesthetic and surgery and derives the advantages during the all important years between 4 and 7 when the arching of the palate, shape of the dental ridge, and occlusion of the teeth are largely determined. This also prevents the development of the dull and stupid facial expression characterized as the adenoid faces. Recent studies indicate that this proper arching of the palate and dental formation are the result of more or less continuous pressure of the tongue upon the parts affected; the mouth breather naturally loses the affect of this pressure or support. While I do not uphold the practices of some large school clinics of driving the youngsters in for wholesale tonsillectomies, I do emphasize the fact that a preventive tonsillectomy and adenoidectomy are much to be preferred to a curative operation.

In conclusion, I wish to state that I lay no claim to originality for any of the material here presented. To my former professors, teachers, hospital co-workers and authors of well known standard monographs goes the credit for any formula or procedure that has been discussed.

In closing I wish to acknowledge with grateful appreciation the good cöoperation of my fellow physicians during my first year of private practice. Your cöoperation has been quite encouraging indeed and I hope that the services rendered to your patients has been such that your continued support will be granted. I thank you.

THE HYPOTHYROID HEART*

By WALTER C. SWANN, M. D., F. A. C. P.
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THE title of this paper, the hypothyroid heart, was chosen in order to cover that large group of less severe cases not included in the myxedema class. I have tried to show what I believe to be true, that some of the hypothyroid patients with a rate of minus ten to twenty will have early heart changes that are often overlooked.

Tabulation of two hundred and ninety-six consecutive basal metabolic rate tests show two hundred and five minus readings. Thus seventy percent of all cases having metabolism tests were hypothyroids in some degree. It is customary to classify as myxedema patients all those having basal metabolic rates of minus twenty or below and all those of minus ten to twenty as mild hypothyroids. The average metabolic rate of all the minus cases in this series was minus 14.2 percent. One hundred and fifty-four were minus ten or more. Thirty-six were minus twenty or below. Trumper and Cantarow[3] say in their book on biochemistry that values below minus thirty-five percent are extremely unusual although figures as low as minus forty-two percent have been observed in severe cases of myxedema.

The determination of the basal metabolic rate is almost essential in the diagnosis of mild grades of hypothyroidism and in following the response to treatment. However, we may get a minus basal metabolic rate in other conditions such as hypo-pituitarism, hypo-adrenalism, lipoid nephrosis, shock, tuberculosis, low caloric diet deficient in protein and any condition of malnutrition. It is important therefore that we do not depend too much on the basal metabolic rate in making our diagnosis of hypothyroidism. At a recent meeting of the American College of Physicians, one essayist made the statement that single basal metabolic rate tests are of no value, but that several consecutive tests over a period of days or weeks will give an average level that may be relied upon to indicate the actual basal rate.

The first reported cases of myxedema heart were published by Zondeck in 1918 from Krause's clinic in Berlin. He described a generalized heart enlargement with normal blood pressure, slow pulse rate and electrocardiographic changes, all of which were benefitted by thyroid medication. Since that time many papers and case reports have been published on this subject and other phases of hypothyroidism.

Fahr[6] in 1925 reported the first cases from this country. He not only caused a reduction of the hearts to normal size on thyroid treatment, but caused them to dilate again on withdrawal of treatment. In the American Heart Journal for October, 1932, he gives his further studies of seventeen cases of myxedema heart. Some of his conclusions were; that seventy five percent of his cases of myxedema show signs and symptoms of heart failure. Thyroid extract relieves the signs of heart failure promptly. Many cases of myxedema heart are complicated by coronary sclerosis. The age of onset of myxedema heart in his series varied between nineteen and seventy years of age.

In taking up the diagnosis of hypothyroidsim let me say again that the basal metabolic rate is probably the most necessary single test to guide us. But not all patients showing a minus rate will be found to be hypothyroids. The text book picture of hypothyroidism is extremely rare. They are usually described as fat and expressionless with rough dry skin and coarse hair. Some of my cases have been thin, almost emaciated and very alert mentally. The one symptom that I have

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found common to all of them is easy fatigueability. Dr. Albert H. Hoge[1] has listed the symptoms well in his paper on Thyroid Deficiencies and Chronic Infections. He gives as the chief symptom, easy fatigue and exhaustion. Other symptoms listed are: (1) Tendency to contract infections that do not respond well to treatment; (2) mostly females; (3) generally they are under-nourished; (4) rarely do they eat breakfast; (5) seldom are their feet and hands warm, regardless of the weather; (6) they usually have a lowered basal metabolic rate; (7) all improve on thyroid treatment.

All authorities will agree that easy fatigueability and exhaustion are what we look for in heart failure cases that have not advanced far enough to give us much else in the way of diagnosis. This has led me to believe that the same symptoms in hypothyroidism may be due to the effect on the heart muscle of the disturbed metabolism. Hypothyroidism is accompanied by a lowered blood sugar and this will interfere with proper fuel for muscular activity.

Rockwell of the university of Minnesota has shown by dynometer and ergographic examination, that the voluntary muscles of myxedema patients are reduced in strength and fatigue much more rapidly than in normal subjects. After thyroid treatment the same muscles give a much improved function test. Therefore it should follow that the lack of thyroid hormone which causes weakening and fatigueability in the voluntary muscles will also cause the same changes in the heart muscle. Early changes in the heart muscle which may be starting in the mild hypothyroid cases could be prevented by feeding small amounts of thyroid.

The heart muscle shows its lack of nourishment first in feelings of exhaustion. Then follows low blood pressure, cold extremities and sometimes anginal pains. Blood counts show a relative lymphocytosis. McCullough and Dunlap in a report of two hundred and fifty differential blood counts on thyroid cases conclude that the degree of relative lymphocytosis is the same in hypothyroids as in hyperthyroids.

The electrocardiographic changes that I have seen in this group of cases are lowered voltage and inversion or a flattening of the T waves. Some of my patients have shown a marked improvement and some a return to normal electrocardiograms after thyroid treatment.

X-ray examination of the heart in these mild hypothyroid cases does not show as a rule any marked enlargement in the first examination, but after the patient has been on treatment for a few weeks a second film of the heart will usually show a reduction in the size of the heart. In plating these hearts I have been very careful to get the same distance from the patient in each examination, teleoröentgenograms were made.

Fahr's[6] clinic reports the electrocardiographic changes as negative T waves in one or more leads, abnormal QRS complexes and lengthened PR intervals, all of which returned to normal on thyroid medication. Their x-ray examinations show dilated hearts that become smaller on thyroid treatment and dilate again if the medication is withheld.

Some years ago Sutherland Simpson produced cretin sheep and goats by removal of the thyroid shortly after birth. Twenty of these animals were later given an autopsy examination. All of the animals showed arteriosclerosis; none of the controls did. The hearts of nearly all the animals were described as dilated, flabby and pale. Cross striation in the heart muscle was absent in several and the muscle fibers were not normal in appearance. Sutherland Simpson's daughter, Ethel, studying the voluntary muscle of the same sheep, found there was a changed appearance from the normal. There was a definite smaller quantity of cytoplasm and a reduction in the number of nuclei.

I now wish to give a few selected case reports and show the electrocardiograms and teleoröentgenograms made on these patients.

Case No. 1. Female, twenty-seven years of age. Her chief complaint was easy fatigueability and exhaustion. In her own

words, "Weak spells, almost falls out of chair while trying to work. Gas and indigestion, gets numb all over. Cold hands and cold feet. Persistent constipation. Can't seem to get rested." Her present weight of ninety-eight pounds is at best, thirty-five pounds under weight. Nothing to account for her symptoms was found in the physical examination. Basal metabolic rate was minus 19. Electrocardiogram not abnormal except in lowered voltage. Teleoröentgenogram shows slight prominence of pulmonic conus, total width is 11.2 cm. which is in normal limits. Blood count; Hemoglobin, 73%; Red cells, 3,200,000; White cells, 7000; Polymorphonuclears, 70%; Small lymphocytes 30%. We have in this case easy fatigue and exhaustion, cold extremities, constipation and a lowered basal metabolic rate upon which to base a diagnosis of hypothyroidism. The cardiogram and x-ray do not seem to prove any abnormality. However, after this patient had been on thyroid treatment for fourteen weeks she reports that she feels much improved generally. Basal metabolic rate has not improved as much as might be expected and is still minus 14. The teleoröentgenogram shows a reduction in total width of heart shadow of .6cm. Electrocardiogram shows a slight improvement in voltage. The reduction in total width of an already normal size heart as shown in this case is exactly what I hoped to show as evidence in proof of my hypothesis, that heart muscle changes are present but not easily apparent in these mild hypothyroids. Teleoröentgenograms taken for comparison with former films of the same patient must be carefully made. Exposure time of sufficient length must be used to get the heart in systole as well as in diastole. The x-ray tube must be centered on the same anatomical landmark and the same phase of respiration chosen for the exposure.

Case No. 2. Female, thirty years of age. Complaining of extreme nervousness, shortness of breath at times but not brought on by exercise. Fainted twenty-five times in the last year. Has a tendency to stay overweight. Although she had wanted children and has done nothing to prevent conception, has never been pregnant. Very seldom eats breakfast. Is very sensitive to heat and cold. The points of importance found in her physical examination were, blood pressure 98/60, weight 150 pounds, heart enlarged slightly to the left. Blood: 75% Hemaglobin; 3,600,000 red cells; 8,200 white cells; 65% polys; 35% small lymphs. Basal metabolic rate minus 17. Teleoröentgenogram shows a total heart width of 12.5 cm., which was not considered abnormal. The teleoröentgenogram now shows 1 cm. reduction in the total heart width. The electrocardiogram does not show any improvement. This patient reports that she feels remarkably improved. Her weight is now 145 pounds, a reduction of five pounds.

Case No. 3. Mrs. T. F. B., fifty-six years of age. Chief complaint, tires easily and feels exhausted almost all the time. Rarely desires any breakfast. Coldness of extremities accompanied by tingling sensations. Recently she has noticed that walking has caused shortness of breath and vertigo. There is nothing in the past history to suggest heart disease. She was found to have a low blood pressure of 112/70. Her weight was 176 pounds. Basal metabolic rate was minus 23. Electrocardiogram revealed low voltage T waves. Teleoröentgenogram gave a total heart width of 14.1 cm. and there was apparently a fusiform aneurysm of the thoracic aorta. After a few weeks on thyroid medication a second teleoröentgenogram shows a marked reduction in the size of her heart and the electrocardiogram shows an improvement in the voltage of T waves. The basal metabolic rate is now minus 19. The patient says she feels very much better.

Case No. 4. Mr. L. H. N., age 39. His chief complaint was easy fatigueability and a tendency to faint easily. Weight tends to increase although he diets himself constantly. Rarely eats much breakfast. Has had some attacks he called "weak heart". The important findings in his physical examination were, weight 209 pounds, blood pressure 110/60, basal metabolic rate minus 12, electrocardiogram shows low voltage T one,

negative T two and T three. The fluoroscopic examination shows a fairly normal heart in size and contour. The blood count gave a relative lymphocytosis and a slight secondary anemia. After he had been on thyroid treatment for six weeks he reported that he felt remarkably improved. The electrocardiogram shows an improvement in voltage and the T two has become positive instead of negative as it was before treatment. This patient was given no treatment except his thyroid tablets and the benefit shown in the electrocardiogram was attributed to his treatment.

The four cases reported have been selected to show evidence of improvement of the heart muscle due to thyroid medication but I do not wish to give the impression that all the cases studied gave this type of evidence to show the good derived from the thyroid. I will not bore you with further case histories but want to show you some records of cases taken from the hypothyroid group. All these patients had symptoms comparable to those quoted above and you will note that the x-ray and electrocardiographic records would tend to show either no benefit at all or that the patients are more pathological now than before treatment.

It has been shown that the patient's feeling of improvement is the only reliable evidence in proof of benefit from thyroid medication. Even this may be psychic. Graphic records and serial x-ray examinations may be made to prove almost anything. Dilated hearts will reduce in size on rest alone. Electrocardiograms will change from good to bad and back again on no treatment at all. Mild hypothyroid patients do have as their chief symptom, easy fatigue ability and exhaustion which is also recognized as the first symptom of a failing myocardium. These patients will all say they are improved after treatment with thyroid extract. Therefore, I believe we can say there is such a thing as the hypothyroid heart although it is not easily proven. It is my opinion that the foundation for coronary disease and thrombosis of the coronary artery is often developed as secondary to the so-called mild hypothyroidism. The hypothyroid patient should be kept on treatment over a period varying from one year to all the remainder of his life. Observations of the basal metabolic rate should be made at intervals and are only accurate if taken in a series of three or more tests made on different days.

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SEX EDUCATION

"Sex Education" is the title of a group of articles by Dr. Thurman B. Rice, the first of which appears in the July issue of *Hygeia*, the Health Magazine. The series is directed entirely to adults—to parents, prospective parents, teachers, scout masters, ministers, physicians and all those who have to do with the training of boys and girls. The American Medical Association has available pamphlets, intended for children and young people, which are sold to those who wish literature to be placed in the hands of the young people themselves.

In the first article Dr. Rice discusses the ideals and purposes of sex education. He believes that sex is pure and chaste when it is not confused with sensuality. He believes that children should receive information on sex through desirable channels and not from the gutters of the street.

The young people of today are demanding a positive education. In this they are wise, for once the mind is filled with pertinent facts, it is satisfied and goes about its legitimate business untempted by morbid or lascivious curiosity.

In the August issue of *Hygeia*, Dr. Rice will discuss "Reproduction in the Plant and Animal Kingdoms."

INTRATHORACIC TUMORS

By M. I. MENDELOFF, M. D.
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THE object of this paper is to call attention of the practicing physician to the fact that intrathoracic growths occur rather frequently, and that the diagnosis is not very difficult and can be substantiated before death. The four cases which I present have been observed during the past four or five years, two of these cases coming to autopsy with the diagnosis verified.

Case No. 1. Adeno-carcinoma of lower lobe bronchus complicated by bronchiectasis. The patient, a woman of 45, was seen by me with a history of influenzal pneumonia of lower left lobe. As the process did not clear up, chest aspiration was attempted but no fluid was obtained.

The patient continued to run a temperature, and leucocytosis and marked pains in chest persisted. Lung abscess was suspected and bronchoscopy was advised. When the bronchoscope was passed a pinkish nodule was observed in lower left lobe bronchus. Biopsy showed adenocarcinoma. Since then the patient has received numerous x-ray treatments and aside from marked bronchiectasis, which requires postural drainage twice a day, her condition is fair. X-ray examination made recently shows marked density involving the lower left lobe.

Comments: The condition in this case followed acute influenzal pneumonia. Attention has been called by several observers to the frequency of pulmonary neoplasm as encountered in patients with a history of recent influenza. A negative thoracenthesis in spite of continuous fever, sweats, rapid pulse and pains in left chest made me suspect lung abcess. The bronchoscope revealed a tumor and the pathologist made the diagnosis of lung malignancy.

Case No. 2: Carcinoma of the lung. The history is that of a man 39 years of age, who enjoyed good health until about 8 months before death, when he began to experience severe pains in chest, paroxysmal in nature, the pain extending over the precordium, radiating to the axilla and the left arm. Along with the paroxysms of pain he would have attacks of faintness, dizziness, sense of precordial oppression and marked shortness of breath. Loss of weight gradually developed, as well as loss of strength. On examination he presented the following signs of a mediastinal mass: cyanosis, suffusion of face, markedly dilated veins over chest and abdomen, and increased parasternal dullness. X-ray showed a mass involving the right upper lobe. Special examination showed deflection of trachea and paralysis of right vocal cord, and bronchoscopy showed a growth on the wall of the right bronchus, two cm. below bifurcation. Biopsy showed squamous cell carcinoma. He was treated with x-ray and radium but without benefit. He died suddenly from pulmonary hemorrhage, and the autopsy showed carcinoma of the lung, obstruction of superior vena cava, bronchiectasis and pulmonary hemmorrhage.

Comment: This man consulted me on account of pain in upper abdomen and chest. He stated that he was operated upon for appendicitis 2 months before but his abdominal symptoms persisted. It is well to remember that intrathoracic lesions may give rise to abdominal symptoms, in this case due to obstruction of superior vena cava.

Case No. 3: Mediastinal tumor occupying the left chest.

The history is that of a white male 26 years old who has been in good health up until four months ago, when he developed cough and fever. This cleared up to re-appear with marked dyspnea and the expectoration of prune juice sputum. Pneumonia was suspected. On admission to hospital the tem-

perature was 103; pulse 130; respirations 34. He remained in the hospital for two weeks, but his temperature persisted. Chest aspiration was done and a small amount of amber colored fluid was drawn off. As he continued to run a septic temperature another aspiration was done, but only a small amount of clear fluid was withdrawn. From that time on he continued to complain of marked pain in left chest paroxysmal in character, with cough and marked dyspnea. On several occasions he expectorated brick dust sputum, and thirty-five pounds lost in weight in six weeks. X-ray showed a round area of density occupying the greater portion of the left chest.

A diagnosis of mediastinal tumor was made and treatment with x-rays was instuted. His condition grew worse and operation was undertaken. A tumor was found occupying the entire left chest displacing the heart to the midline. The patient died before the operation was completed. The removed tumor was 15x10x9 cm. and microscopical examination showed it to be fibrosarcoma.

Comment: History of symptoms following pneumonia but with negative repeated chest aspirations. Paroxysmal dyspnea, marked pains in chest and x-ray picture of density in left lung were indicative of an intrathoracic lesion.

Case No. 4: Tumor of pleura, probably endothelioma. History of a man past middle life who came in to see me on account of expectoration of a small amount of bloody mucus after exertion. Has always enjoyed good health. No loss of weight, no cough. Has had annual physical examinations and was always found to be in good condition. The last examination was made six months ago with negative results. Two years ago had pressure in chest with slight dypsnea. Except for a fast pulse and slight hypertension has considered himself well. Physical examination showed a well developed man in no great distress, with signs of arteriosclerosis and hypertension. The right chest was flattened and breath sounds were absent in the upper right lobe. The left lung was negative. The heart was pushed to the left. The rest of the examination was negative. A diagnosis of pleural effusion was made and three thoracenteses in different points of the right chest were all negative for fluid. The impression after examination was that the man had a lung tumor.

X-ray Report: A homogeneous density fills most of the central portion of the right chest, shading off towards the periphery and towards the apex. The appearance suggests either thickened pleura or new growth.

Comment: The insidious onset, absence of constitutional symptoms, gradual development of cough, dyspnea and weakness occurring in a patient past middle life, are characteristic of neoplasm.

All authorities agree that there has been an increase in the number of intrathoracic newgrowths in recent years and this increasing frequency forces the physician to consider its possibility in the differential diagnosis. The reasons for this apparent frequency have been numerous. Recent epidemics of influenza, modern industrial conditions with irritating dusts, use of x-ray, the employment of the bronchoscope, more systematic use of autopsies all have been brought forward in attempt to explain the increase in the number of intrathoracic neoplasms reported.

Symptoms: Pain, acute at first, is replaced by soreness; other symptoms are cyanosis due to the compression of vena cava, clubbing of fingers, hoarseness due to paralysis of the vocal cords and of the recurrent laryngeal nerve. Dysphagia may be present as well as swelling of the arm. Along with the above symptoms there is progressive loss in weight and strength with cachexia. Fever may be high and drenching sweats may be present.

The physical signs are those of intrathoracic growths with areas of dullness with hyperresonance and patchy asthmatic breathing.

When the disease attacks the lower lobes pleurisy with effusion is the diagnosis usually made. Exploratory puncture will reveal no fluid or if fluid is present it is usually bloody and recurs after tapping. Occasionally bits

of tissue are obtained with the fluid and cancer cells may be found in the fluid. After aspiration, if the chest is re-examined, the physical signs of dullness will persist. If the tumor is situated in the upper lobes one must thing of tuberculosis. While in tuberculosis, both lungs show changes, one more than the other, here the changes are confined to one side. Sputum, repeatedly negative for acid fast bacilli should arouse our suspicion of a neoplasm being present. In addition marked paroxysmal dyspnea, dilated veins and the x-ray findings should prove helpful.

Syphilis of the lung is a rare condition. Many text books do not mention it. At any rate, it is my belief that persistent rales with diminished resonance over the lower lobe are not sufficient to make a diagnosis of lung syphilis even if rales disappear on treatment.

The use of x-ray and of the fluoroscope and the bronchoscopic examination in the suspected cases have done more to diagnose cases of intrathoracic tumors than any other agent in use.

In conclusion let me emphasize:

1. There appears to have been a striking increase in the number of cases of intrathoracic tumors and that the condition is more common than is believed.

2. Early symptoms may be absent or indefinite.

3. The presence of cough, dyspnea with expectoration of bloody sputum in persons past middle life, particularly if the sputum is negative for tubercle bacilli, should arouse suspicion of lung malignancy, particularly if the cough is persistent and not controlled by sedatives.

4. Recurrent pleural exudates, if hemmorrhagic, should arouse the suspicion of lung malignancy.

5. The importance of the use of x-ray and fluoroscope in making diagnosis in such cases.

6. In obscure chest cases which do not show a tendency to improve a bronchoscopic examination is of great value.

ACUTE BACK INJURIES*

By T. T. BAGWELL, M. D.
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IN selecting this subject I could think of no group of orthopedic conditions which are of more vital importance to practitioners of medicine than acute injuries of the spine and back. Many of us are prone to consider too lightly those cases presenting no external or positive evidence of injury. On the other hand the back offers the malingerer an excellent opportunity to confuse even the most pains-taking surgeon. It would be impossible in a single brief article to consider in detail all the conditions which might result from trauma to this portion of the body, so I will attempt simply to outline in the form of a differential diagnosis those injuries that are most frequently encountered in the coal fields, and touch briefly on their treatment.

Injuries to the back may vary from a simple sprain of the muscles and ligaments to a complete fracture dislocation of the spine, associated with severance of the cord followed by a total permanent paralysis from the site of injury down.

All cases, no matter how trivial they may seem, should be given a thorough physical examination, including both anterio-posterior and lateral x-ray views. Many times definite evidence of injury will be found that otherwise might have easily been overlooked.

Among the simplest of these injuries which come under our observation are the sacro-iliac and lumbo-sacral sprains. These may be

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acute or chronic. The acute cases present a definite history of a single injury, in which a sudden acute strain was placed upon the lower back, followed immediately by pain of varying intensity at the site of the injury. Later pain may radiate down the course of the sciatic, lumbar or superior gluteal nerves. Occasionally these referred pains become more intense than that of the injured area. Shifting of position is attended with pain. The patient states that when he is seated he has trouble arising to the erect position, and while standing, assuming the sitting position is painful. Occasionally in a uni-lateral sprain of the sacro-iliac joint an abnormal posture is assumed. Most often a tilt to the opposite side affords relief, though in a smaller percentage of cases the list is to the same side. The latter is usually true only in those cases associated with sciatic pain when the sciatica is the most disturbing feature.

Chronic sprains may follow the acute, or may come on insidiously. They are sometimes referred to as occupational, and are seen in patients whose duties require constant heavy strain on the back muscles. Frequently these patients complain of having suffered a mild sprain which did not require cessation of work, and was relieved somewhat by rest. In this type the differentiation from chronic arthritis is often difficult. This point is illustrated and emphasized in a series of cases of low back pain reported by Miltner and Loendorf. Of 1375 cases, in which the primary diagnosis was sacro-iliac or lumbo-sacral sprain, after one to ten years observation 850 of the group had the diagnosis changed to lumbar arthritis. And certainly it could not be more beautifully brought out than in the mine injury patients who would like to have compensation during the depression. The new diagnosis must be made either by follow up x-rays or by the development of arthritis in various other points.

The four cardinal symptoms of these conditions as listed by Steindler are: First, a definite circumscribed area of localized tenderness, frequently associated with spasm of the surrounding muscles. Second, a typical position which aggravates the pain. Third, a position that when assumed affords relief from the pain; and fourth, acute sprains respond to immobilization of the joint in the position of relief, or in such a position as will relax the sprained ligaments.

The localized tenderness is found over the anatomical site of injury, over the posterior sacro-iliac ligament in sacro-iliac sprain and over the lumbo-sacral angle in lumbo-sacral sprain. Smith Peterson has called attention to a valuable differential point. In sacro-iliac sprains when the patient is seated with knees flexed, relaxing the hamstring muscles, he can bend forward freely without discomfort, but when standing, forward flexion is greatly limited and attended with considerable pain in the injured joint due to tension on the hamstrings, holding the pelvis fixed. In lumbo-sacral sprains, forward flexion is equally as painful when standing as when seated.

Certain special tests contribute valuable information as to the exact location of the lesion. Forcible compression of the iliac crest often elicits pain in the sprained sacro-iliac joint, but as a rule has no effect on the lumbo-sacral joint. Languere's, Goldwait's and Gaenslen's signs are positive when the injury is to the sacro-iliac joint and usually negative in the lumbo-sacral. The first of these consists in forcing the leg in flexion, abduction and outward rotation causing pain in the affected sacro-iliac joint. In the second, the thigh is forcibly flexed upon the abdomen, the knee is then extended producing painful motion in the sacro-iliac as a result of tension on the hamstrings. The third consists of holding the thigh and knee of the affected side flexed upon the chest, while the opposite hip is hyperextended producing pain in the sacro-iliac joint. Straight leg raising is usually painful in those cases complicated with sciatic disturbance, whether they be sacro-iliac or lumbo-sacral.

None of these tests is infallible however, especially in the more acute sprains, as it is often impossible to fix the injured joint while exerting force on those surrounding it. Then too, multiple sprains may exist, both sacro-

iliac as well as lumbo-sacral may be involved, but there is sufficient evidence to assure us that the patient has sustained a sprain of the lower back and after a few days immobilization in the position of relief the exact pathology can most likely be determined.

The roentgenological examination is of very little value in making the diagnosis, severe sprains with even partial dislocation cannot be determined in the x-ray picture, certain congenital anomalies such as impinging transverse processes, sacralization of the fifth lumbar vertebræ cannot be considered significant as the lumbo-sacral spine varies so widely that it would be difficult to describe the normal.

The treatment of these low back sprains is for the most part satisfactory. In all severe acute cases, whether complicated or not the patient should be placed on a rigid bed or Bradford frame with some support to the back, either adhesive strapping, a plaster cast, or in case of considerable spasm of the muscles surrounding the injured joint, extension to both legs may be beneficial. The traction is especially indicated in those cases complicated with sciatic pain or asymetrical posture. As the condition improves, heat, massage and general corrective measures are beneficial. When the patient becomes ambulatory, some form of external support should be applied for a period of several weeks. Adhesive strapping or a sacro-iliac belt is usually sufficient, but if more immobilization is required, a snug fitting plaster cast may be applied extending to the knee of the affected side. The patient may get about on crutches if weight bearing is tolerated.

Manipulative treatment under anesthesia is reserved for those cases which after a reasonable time, fail to respond to the more conservative measures. The manipulation suggested by Sir Robert Jones, consists of holding the pelvis firmly on the table then completely flexing the hip upon the abdomen while extending the knee. The patient should be completely relaxed under anesthesia before undertaking the procedure. This puts considerable tension on the sciatic nerve as well as on both sacro-iliac and lumbo-sacral ligaments, and for this reason is often beneficial in those cases with persistent sciatic disturbance. Following the manipulation, rest in bed with support to the back or extension to both legs is indicated.

Operative interference is of course the method of last resort, and should never be undertaken until all conservative measures have been carefully tried out over a long period of time. The operation consists of fusion of the injured joint by one of the many methods described in the literature. Recovery almost invariably follows when firm bony ankylosis has occurred.

Next in severity are the fractures of the spine which present no evidence of cord injury. Fractures of the spine are caused most commonly by indirect violence to the vertebral column through sudden forceful hyperflexion of the trunk. The body of the vertebræ is involved more frequently than the neural arch and the fracture of the body is usually of the compression or impacted type, the body being compressed from above downward and becoming wedged shaped with the base of the wedge posteriorly. The common site is in the mobile dorso-lumbar segment of the spine extending from the 11th dorsal to the second lumbar vertebræ, the first lumbar being the one most often fractured; other common locations in order of their frequency are the 12th dorsal, 2nd lumbar, and the 11th dorsal. Fractures of the other vertebræ are less common.

Compression fractures of the vertebræ may be overlooked at the time of the injury, simply because the immediate symptoms do not appear sufficiently severe to warrant a thorough examination. When the fracture is associated with paralysis of the trunk and extremeties from hemorrhage, contusion, laceration or complete severance of the cord, the diagnosis is obvious and as a rule appropriate treatment, such as laminectomy for relief of pressure, is instituted promptly. Many fractures of the vertebræ, however, are not com-

plicated with spinal cord injuries. In these unfortunate individuals the pathology may not be recognized, a diagnosis of contusion of the back or muscle strain is made and no treatment or ineffectual treatment is administered. When untreated, the patient is incapacitated for months and may be totally and permanently disabled. Since the majority of fractures of the spine occur in laboring men the economic loss to the patient, to his family and to his employer may be considerable. It is important that physicians realize that the physical findings alone in fractures of the spine are not always conclusive. Pain is usually present but may not be acute for several days. Stiffness of the back and soreness on pressure or movement are common and gradually increase in severity in untreated cases. On palpation a definite prominence of one of the spinous processes may be found and when the fracture involves the neural arch local echymosis may be found. A positive diagnosis may be made, only with the roentgen ray. Both views of the entire spine should be made, as the lateral view often demonstrates the vertebral bodies more clearly than the antero-posterior view. Isolated fractures of vertebræ at different levels in the spine also occur more frequently than is commonly supposed and may be missed unless x-rays of the entire spine are obtained.

The treatment of these compression fractures has received more attention in recent years since correct roentgen rays have demonstrated the frequency of this injury and since the need for more accurate reduction has been experienced in compensation and medico-legal cases. The results of treatment as in fractures of the other bones must be estimated by three factors, namely; anatomical reposition of the fragments, correct alignment, and ultimate function. Correction of deformity of the crushed body is necessary to assure restoration of function of the spine. If uncorrected, the wedged-shaped vertebræ produces a forward bending of the super-iencumbent vertebræ. The involuntary effort to maintain the erect attitude enforces, in turn, an exaggerated lumbar lordosis which results in muscular and ligamentous strain causing backache. The principle of treatment, of which in detail varies, is hyperextension of the spine; this is well known but difficult to carry out with ordinary hospital facilites. Hyperextension of the spine can be accomplished by the use of several different frames designed especially for this, the best known and first to be used being the Rogers frame. Rogers first described this frame for gradual hyperextension of the spine in 1930. The apparatus is essentially a Bradford frame, excepting that chrome spring steel bands, broadside horizontal, are used instead of pipe or tubing for lateral bars. Canvas is stretched tightly across the frame as on the Bradford frame, and upon this the patient lies in the recumbent position. By means of a ratchet attached to the bed, or by an overhead pulley the lateral bands can be bent to render the frame concave or convex. The treatment is begun with the frame horizontal or slightly concave, continuous traction to the head or legs may be used in conjunction with the frame. As the frame is curved more and more convexly the spinal column is hyperextended, traction being exerted upon the vertebral body through the anterior spinal ligament and the intervertebral discs. The compression deformity is gradually corrected and the vertebræ assumes its normal contour and alignment.

The technic as originally described consisted of very gradual hyperextension over a period of several days, complete correction being secured in 5 to 10 days. When maximum correction has been obtained, as demonstrated by the roentgenogram, the patient is placed on a curved Bradford frame or a plaster cast is applied to maintain the corrected position for eight weeks. A spinal brace is applied before the patient is allowed to become ambulant and this is worn from 4 to 6 months, depending on the severity of the symptoms. Recently Rogers has modified his technic so that correction is secured much more rapidly. An anesthetic is given and the spine corrected after which a plaster cast is applied.

The method of gradual hyperextension is especially applicable to cases of fracture of the lower dorsal and lumbar vertebræ without paralysis. The apparatus may be used after laminectomy in favorable cases when the spinal cord is found not to be extensively traumatized so that a functional recovery is anticipated.

Under this method of treatment recovery is usually complete if there has been no paralysis and a large majority of the cases are able to return, in time, to their former laborious occupations.

Another type of fracture of the spine seen frequently in miners, usually as a result of direct violence such as the falling of a reasonably small piece of coal or slate, is a fracture of one or more of the transverse processes. Pain, tenderness, and limitation of motion are the prominent symptoms, and the fractured processes can be seen on the antero-posterior x-ray plate. Such injuries are frequently associated with considerable damage to the soft tissues.

Fracture of the lamina with or without fracture of the bodies may occur. Fractures of the sacrum are very rare and are often unrecognized unless a well detailed x-ray is obtained. Fractures of the coccyx occur more often and may be detected by palpation and manipulation of the coccyx with a finger in the rectum. Here too, the x-ray examination confirms the diagnosis.

All of these conditions are treated by proper immobilization of the injured part for a sufficient period of time followed by proper supportive appliances for the back as indicated. Occasionally fractures of the coccyx are best treated by completely removing the distal fragment. In uncomplicated cases of any of these injuries the prognosis is as a rule good.

A CASE OF TRICHOMONAS INFECTION OF KIDNEY PELVIS*

By A. C. MADSEN, M. D.
Elkins City Hospital, Elkins, W. Va.

PYELITIS can be caused by many different organisms—most common of which are: B. *coli, staphlococci, streptococci;* and less common: *tuberculosis and typhoid bacilli, and gonococci.*

Protozoa infections of the pelves are exceedingly rare. We wish to report a case of trichomona found in the pelvis and bladder in a patient with pyelitis. As far we are able to discover, only one other case has been reported—one by *Lewis* and *Carroll* in the Journal or Urology, March, 1928.

Our case is that of a young man 22 years of age, who came to the Elkins City Hospital with a diagnosis of appendicitis, complaining of cramp-like pain of two weeks' duration in the right lower abdomen and right renal angle. He had no urinary symptoms. Examination revealed tenderness over right kidney and lower right abdomen. Temperature was 101.2 axillary, pulse 110, and respiration 22. Wuc 16, 200. The urine was loaded with pus cells, some in clumps.

The right ureter was catheterized and collected urine from pelvis also showed pus cells. The trichomona organism was not immediately discovered because the fresh specimen was not examined and when dead it much resembles a pus cell. Later specimens from kidney pelvis and bladder, examined fresh, revealed this parasite in great numbers moving actively about. This organism is pear shaped, about the size of a polymorphonuclear leukocyte, granular in appearance with four flagella at the blunt end and along one side is an undulating membrane with thickened free edge which is continued backward as a short flagellum.

Treatment consisted of inlaying ureteral catheter with daily instillations of silver nitrate one per cent for six days while patient was in hospital, and two subsequent catheter-

*Read before the Barbour-Randolph-Tucker County Medical Society on April 26, 1933.

izations and instillations at weekly intervals. The temperature became normal in 24 hours, symptoms disappeared in three days, and at last examination no more pus cells were present. The trichomona also was not found.

Whether or not this organism, which is often found in the colon and vagina and sometimes in mouth and sputum from gangrene of lung, is pathogenic, has been a disputed question. Some believe it is; others that it is not; and still others that only concomitant with other infections is it pathogenic. It is well known that it often causes vaginitis and that with proper treatment the symptoms clear up when the parasite is eradicated.

The case of Lewis and Carroll cleared up coincident with destruction of the trichomona and they concluded that this organism when found in the urinary tract is pathogenic. Our case became symptom free in a few days and when pus cells were no longer present, neither was the organism.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

Commemoration last year of the 50th anniversary of the discovery of the tubercle bacillus brought forth a number of excellent papers summarizing progress made in the fight against tuberculosis during the past half century. Among these Edgar Mayer of Saranac Lake, in his Robert Koch Lecture, reviewed critically the preventive and curative measures in tuberculosis since Koch. Our entire knowledge of infectious diseases and various related branches of learning rests upon the foundation which Koch established. It was he who devised methods which gave science the possibility of solving problems of immunity on an exact experimental basis and who taught the world how to transmit infectious diseases experimentally from animal to animal. Koch's great achievement is fittingly commemorated by recounting progress made since then. Excerpts of Dr. Mayer's paper follow.

PROGRESS IN TUBERCULOSIS CONTROL

Shortly after the staining of the tubercle bacillus had been described in the *Berliner Klinische Wochenschrift* Trudeau learned from Prudden the technique of identifying the organism. His interest aroused, Trudeau struggling with tuberculosis himself and already familiar with the methods of Brehmer and Dettweiler, founded the first American sanatorium at Saranac Lake.

Not long after the recognition of the bacillus came tuberculin with its rosy promise. While specific tuberculin treatment of pulmonary tuberculosis has proved disappointing tuberculin as a diagnostic procedure to reveal the presence of infection in human beings has become indispensable. The interpretation of the phenomena observed in the tuberculin reaction has brought in its wake numerous problems related to allergy and immunity such as the toxin-antitoxin theory, cellular immunity, the altered course of superinfections, fatal hypersensitiveness, etc. The mechanisms of immunity are all limited perhaps by time and degree, operating either in one phase to fix tubercle bacilli at points of reinfection and thus prevent or retard their spread, or at other times to fail in checking their growth and act destructively against the host. The mechanism of defense has to do also with specific bacteriolysins, monocytes and leucocytes, but little is as yet known about them. Immunity may be connected as much or more with the tuberculous tissue as with the living tubercle bacilli. Meantime, we must ask ourselves whether we really are imitating nature by aiming to retain hypersensitiveness. Should not desensitization, at least during certain stages of the disease, be our aim? Passive immunity measures have for the most part been disappointing and the workers in immunization have yet much to elucidate.

Control Measures Effective. — Public-health measures, however, have succeeded gratifyingly. Sanitation, sputum disposal, registration of consumptives, segregation of patients in sanatoria, early diagnosis campaigns have contributed much to the control of tuberculosis. Pasteurization of milk and the tuberculin testing of cattle have undoubtedly helped to lower the tuberculosis mortality in our country.

The organized efforts now made for the detection of tuberculosis in children promise a continued drop in tuberculosis mortality. Such studies as have already been made indicate a 3 to 4 per cent incidence of childhood tuberculosis and 0.07 per cent of the adult form that would in part have been unrecognized. Perhaps 50 per cent of all adult tuber-

culosis develops from the cases of childhood tuberculosis. Children of tuberculous families are four times as likely to develop childhood tuberculosis as the non-contact children and twice as likely to have the adult type. Statistical studies are not yet sufficiently complete to permit the generalization that the existence of a previous infection in children either predisposes to, or protects them from, subsequent active disease.

Vaccination Attempts.—The status of BCG is still in controversy. Dissociation of BCG, as well as of avian cultures, into virulent types has been shown to occur in artificial culture media, but not in the human body. The dangers cited in the use of this method of prevention of tuberculosis in children must yet be substantiated. On the other hand, proof of a lasting immunity from its use is lacking and the many statistical studies are faulty. We cannot admit that the results of this prophylactic immunization, quoted as so favorable, have been proved. The use of dead tubercle bacilli (killed by heat) for producing hypersensitiveness and relative immunity that can be shown to last for from 12 to 18 months presents no risk; and its possibilities as a transient immunizing agent should make us hesitate to adopt such a generalized use of live bacilli as has been carried out abroad.

Collapse Therapy.—Surgical measures of treatment intended to immobolize the lung have followed the conviction based on experience that rest and fresh air are still our sovereign remedies. The good results of pneumothorax treatment have overcome the former reluctance to apply active measures and have paved the way for more radical surgical methods in the treatment of tuberculosis.

It is possible that, in the past, operations have been used as a last resort in too many cases that were hopeless; and that on the other hand, many suitable cases that could have been saved have not been selected for surgical treatment.

Yet we have not yet taken sufficiently into account the pathological-anatomical nature of the tuberculous lesion nor the physiology and pathology of respiration and circulation. The treatment of advanced pulmonary tuberculosis is to a great extent the treatment of cavities, complete obliteration of which should be the ideal. The persistence of a cavity makes the prognosis grave. A more precise classification of cavities will help to define indications for treatment. The author describes various types of cavities, such as the early thin or elastic-walled of round or oval contour, the thick walled or rigid form, small multiple cavities or honeycombed in densely infiltrated areas; and comments on the indications for collapse treatment in each of these types.

The Soil.—Aside from measures of direct attack upon the bacillus, advancement has been made also in our understanding of the soil of the host. Much work has been done to learn what factors of the actual disease can be produced chemically. Certain specific proteins and carbohydrates have proved to be toxic to tuberculous animals. The foodstuffs essential for the growth of the tubercle bacillus have been studied. A single bacillus has been isolated and its life cycle followed. Discoveries have been made which shed light on the role played by inorganic elements in nutrition. Precisely how calcium exerts its effects in tuberculosis, so much discussed in the past, has still to be revealed.

Whether calcium therapy in tuberculosis may play a part because of the chemical relationship of calcium to other ions and because of its pharmacological action, rather than as a basis of healing through depositions in caseous tissue, must receive some thought.

Much study also has been given to the effect of the lack of vitamins, coupled with which is the problem of light therapy. Without doubt light and fresh air affect body physiology and the patient's psychology, but exact explanations of the motive of action on the host as well as the definition of the effective spectral light regions cannot be clearly stated.

The effectiveness of the preventive and therapeutic measures applied during the past half century is reflected in the statistical reports indicating the great decrease in tuberculosis mortality in the past 30 years. Since 1900, figures in the United States show a lowering of mortality, from 195.2 per 100,000 to 67.2 per 100,000 in 1930, and it is estimated that by 1937 the level of 40 per 100,000 will be reached in certain of the Northeastern states, unless the world-wide economic depression will interfere. However, the figures for the morbidity rate still remain at a high level, but are difficult of interpretation because of the constant improvement in means of early diagnosis and so forth. The rate of decline in mortality in middle and old-age groups and in young male adults has continued, but the peak of mortality still remains in the group of young adult women. However, between the ages of fifteen and thirty-five years tuberculosis still remains the chief cause of death.

Preventive and Therapeutic Measures in Tuberculosis Since Koch, Edgar Mayer, Am. Rev. of Tuberc., June 1933.

PRESIDENT'S PAGE

IN normally prosperous times the problem of the medical care of the poor is difficult enough. During prolonged periods of economic stress, the problem assumes gigantic proportions and becomes most perplexing. In prosperous times hospitals, physicians, and philanthropic laymen are in a position to give service and money freely to the needy. It is much easier to finance the charity wards when the private rooms are well filled with paying patients. Physicians minister to the indigent most willingly when their incomes are sufficiently large to permit them to provide for their own families generously. When the number of pay patients dwindles to the point where outgo exceeds income, hospitals must reduce charity service to a minimum as a matter of self-preservation. When cash customers are the exception, when bills are generally ignored, and when professional income is reduced to such a degree that it is difficult, if not impossible, to meet living expenses, the physician is forced to abandon the benevolent attitude of happier years.

Ours is a philanthropic profession. From student days we have been accustomed to consider it a privilege and an obligation to care for the sick poor. The lay public holds to this idea so firmly that it is usually assumed that the profession will always render service to the poor without compensation. No other profession, with the possible exception of the clergy, is expected to make such a sacrifice. This is not right. The care of society's unfortunates is an obligation which should be acknowledged and shared by all the more fortunate members of the social organization. The profession of medicine will not forfeit its reputation for charity, sympathy, and benevolence by insisting upon a proper distribution of the costs of medical service to the poor.

Problems of social service can be handled most economically and equitably in comparatively small units where the requirements of the individual cases can be easily ascertained. For that reason I believe each county, through the County Court or Board of County Supervisors, should make provision for the medical needs of the county's poor. Working agreements should be negotiated between the County Court on the one side and the Hospitals and County Medical Society on the other. Hospital care should be paid for on a minimum cost basis. Medical service should be paid for at approximately fifty per cent of the minimum fee schedule, adopted by the County Medical Society.

It is our understanding that this plan has already been recommended to the various county welfare boards by Major Francis Turner, Director of the State Department of Public Welfare. This will mean that the plan suggested above will shortly be in operation. If and when the plan does become operative in West Virginia, we believe that it will mark the beginning of a "new deal" in the care and treatment of the indigent in this state.

D. A. MacGregor, *President.*

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HOSPITAL APPROPRIATION

Hospital owners and superintendents of West Virginia who are not already familiar with the recently enacted budget bill will be interested to know that an appropriation of $25,000 was made for emergency hospital service to laborers and others who may become public charges. This fund is to be administered by the State Board of Control and plans are now being worked out for distribution of the appropriation.

Under the terms of the budget bill, any hospital (other than state hospitals) doing charity work within the state may file with the Board of Control itemized bills for all charity cases treated during the three months period ending October 1, 1933, and each three months period thereafter. Such bills are to be made out in the form prescribed by the Board of Control. Sixty days shall be allowed for the filing of such bills, after which time all bills shall be audited by the Board of Control and scheduled for payment.

If the aggregate of all claims filed exceeds one-fourth of the amount appropriated for the year then the Board of Control shall apportion the one-fourth appropriation so that each claim will receive its pro rata share. No claim shall be considered by the Board unless the Board has received notice from the hospital at the time of receiving the charity patient, said notice to be on forms prescribed by the Board. The Board is authorized to limit the number of charity cases that may be received at any one hospital and also to prescribe its own general rules and regulations regarding forms, method of distribution and payment for services.

An appropriation of $25,000 for emergency hospitalization in West Virginia is not a very large amount for the fifty or more hospitals in the state to depend on. It means an average of approximately $500 for charity work at each hospital. Of course this is better than no appropriation at all, and it is hoped that the fund will accomplish enough good to warrant an appropriation of at least twice the amount by the 1933 legislature.

The success of the administration of the present appropriation, as we see it, lies in the limitation of patients at each hospital by the board of control. Better still, we would like to see a limit of hospital days rather than a limit of patients. Otherwise the hospitals are liable to find themselves receiving only 25 to 50 cents per day for charity patients under the appropriation.

Another appropriation by the last legislature that is of especial interest to the three county tuberculosis homes is a fund of $15,000 for the care and treatment "of persons afflicted with tuberculosis, residents of West Virginia, who may become public charges." This fund is also administered by the State Board of Conrtol and it is understood that expenditures from the fund will not be made for treatment at either of the two state sanitaria. The three sanataria that will benefit under the appropriation are the Eastmont Sanitarium at Morgantown, the Hillcrest Sanitarium at Charleston and the Ohio County Tuberculosis Sanitarium at Wheeling.

NEW HEALTH COMMISSIONER

The JOURNAL wishes to take this opportunity to congratulate Governor Kump on his selection of Dr. A. E. McClue, New Cumberland, as Commissioner of the State Department of Health. Dr. McClue is a comparatively young man who has had enough experience in public health work to successfully manage his department and enough experience in private practice to be thoroughly

familiar with the problems of the medical profession.

As an indication of his desire to eliminate state competition between his department and the medical profession, Dr. McClue's first act as Commissioner of Health was to abolish the collection of fees for work performed by the department laboratory. At the time this order was issued, Dr. McClue stated that the laboratory would be maintained for indigent patients and would not enter the domain of private practice by securing fees from pay patients.

In all of his actions since accepting his appointment from Governor Kump, Dr. McClue has displayed an earnest desire to coöperate to the fullest extent with the medical profession of this state. Under his leadership, we believe that the department of health will reach new fields of usefulness and that it will be maintained strictly as an agency of public health work. Our heartiest good wishes go out to Dr. McClue for a successful administration.

A. M. A. PROCEEDINGS

For the past several years the JOURNAL has published in full the minutes of the House of Delegates meetings at the annual sessions of the American Medical Association. These complete reports, however, are also published in the Journal of the American Medical Association and later in reprint form for individual members. In order to avoid duplication, we are giving herewith simply a resume of the more important deliberations at the recent sessions in Milwaukee.

The opening meeting on June 12 was featured by the addresses of Speaker F. C. Warnshuis, President Edwin H. Cary, the latter covering chiefly the relation of the private physician to the health department, and of President-elect Dean Lewis. The reports of officers were then presented, including the report of the Committee on Legislative Activities dealing with the recent reduction in the cost of the care of veterans. This report, found on page 2022 of the June 24 issue of the A. M. A. Journal, should be read by every physician interested in the veteran problem.

Among resolutions presented at this session were those dealing with a Section of Stomatology, with listing of specialists in the A. M. A. directory, radio broadcasting, early election of delegates, broadening the scope of activities of the council on medical education and hospitals, a bureau of information in Washington, care of war veterans, limiting physicians for hospital staffs to members of Association, competitive practice of medicine, endorsing minority report of the Committee on the Costs of Medical Care, study of birth control, and limiting number of medical graduates.

Of the resolutions presented, all were adopted at subsequent sessions with the exception of those pertaining to the section on stomatology, the Washington Bureau of Information and additional activities of the Committee on Medical Education and Hospitals. Other resolutions later presented and adopted by the House of Delegates was one commending President Roosevelt for safeguarding the interests of veterans with service-connected disabilities and for his action incident to the reduction in medical and hospital benefits for veterans without service-connected disabilities.

Another interesting resolution adopted by the House of Delegates pertained to radio broadcasting, as follows:

WHEREAS, Radio broadcasting is under the control of the federal radio commission, and

WHEREAS, There appear to be no apparent restrictions of the advertising statements and claims that are being broadcast, and

WHEREAS, It appears that the radio is being employed to broadcast unsupportable claims and statements related to a large number of alleged preparations for the cure of many ailments and diseases, thereby misleading the public;

Therefore, be it Resolved, That the Board of Trustees initiate and pursue activities and efforts to terminate misleading and misrepresenting radio broadcastng that is related to medicinal remedies and preparations for the conservation and protection of the health interests of the public.

In regard to medical economics, the reference committee on this subject recognized the constant change in this type of work and recommended that the various county societies deal with this problem in accordance with the following recommendations of the Judicial Council:

By the term "contract practice", as applied to medicine is meant the carrying out of an agreement between a physician or group of physicians as principals or agents and a corporation, organization or individual, to furnish partial or full medical services to a group or class of individuals for a definite sum or for a fixed rate per capita.

Contract practice *per se* is not unethical. However, certain features or conditions if present make a contract unethical, among which are: (1) When there is a solicitiation of patients, directly or indirectly. (2) When there is an underbidding to secure contracts. (3) When the compensation is inadequate to assure good medical service. (4) When there is interference with reasonable competition in a community. (5) When free choice of a physician is prevented. (6) When the conditions of his employment make it impossible to render adequate service to his patients. (7) When the contract because of any of its provisions or practical results is contrary to sound public policy.

Each contract should be considered on its own merits and in the light of surrounding conditions. Judgment should not be obscured by immediate, temporary or local results. The decision as to its ethical or unethical nature must be based on the ultimate effect, for good or ill, on the people as a whole.

At the session on June 15 the following officers were elected: President-elect, Dr. Walter L. Bierring of Des Moines, Iowa; Vice President, Dr. John H. Musser, New Orleans; Secretary, Dr. Olin West, Chicago; Treasurer, Dr. Herman L. Kretschmer, Chicago; Speaker of the House of Delegates, Dr. F. C. Warnshuis, Grand Rapids, Michigan. Cleveland was selected as the place for the 1934 meeting.

There were 14 members of the West Virginia State Medical Association registered at the Milwaukee session.

COUNTY SOCIETY NEWS

CENTRAL WEST VIRGINIA

Fifty-four members and visitors were in attendance at the Webster Springs meeting of the Central West Virginia Medical Society which was held at the Oakland Hotel on the evening of July 19. A fine chicken dinner was served prior to the business and scientific meeting.

Essayists of the evening were Dr. Howard T. Phillips, Wheeling, Dr. John E. Cannaday, Charleston, and Dr. Archer A. Wilson, Charleston. Dr. Phillips gave a practical demonstration on the subject "Diagnosis and Treatment of Common Skin Diseases," with clinical cases and lantern slides. Dr. Cannaday talked on "Gall Bladder Surgery," with lantern slides and Dr. Wilson read a most interesting paper on "Head Injuries."

All three of these talks were of especial interest to the members of the society, as they contained many practical points of value to the general practitioner.

The next meeting of the society will be held at Buckhannon in October.

C. C. CARSON, *Secretary.*

LOGAN COUNTY

The Logan County Medical Society held its regular June meeting at 8:00 P. M. on Wednesday evening June 21st at the Hatfield-Lawson Hospital, Logan, with 24 members and visitors present. Dr. B. D. Smith and Dr. Fred E. Brammer, the society's delegates to the recent convention of the State Association, gave reports of the meeting.

Dr. Isadore I. Hirschman, Huntington, addressed the society on "The Diagnosis and Symptoms of Aneurysms with a Report of an Unusual Case." Following this address Dr. Geo. M. Lyon, Huntington, addressed the society on "The West Virginia White House Conference on Child Health and Protection with Special Consideration of Dysentery as a State Problem."

Dr. Hirschman's address was illustrated by blackboard drawings and x-ray films. Dr. Lyon's, by charts showing mortality rates from dysentery in the various counties of the State and some from other states.

Both addresses were interesting and instructive and were freely discussed by several of the members and visitors present.

Besides our guest speakers the following guests

were present at this meeting: Dr. Edwin Matthews, Huntington; Dr. Don Kessler, Huntington; Dr. R. M. Wylie, Huntington; Dr. Lake Poland, Huntington; Dr. J. L. Patterson, Holden and Dr. Fred Farley, son of Dr. Wm. F. Farley, Holden. Dr. Farley has just graduated in medicine from the University of Louisville and is home for a brief vacation before going back to Louisville for his internship.

The July meeting was held at the Hatfield-Lawson hospital, Logan, on July 19 with 24 members and visitors present. Dr. Wesley C. Thomas and Dr. Joseph A. Guthrie, both of Huntington, were the scientific essayists. Dr. Thomas addressed the society on "The Relation of Upper to Lower Respiratory Infections with Special Reference to the Sinuses." Dr. Guthrie conducted a round-table discussion of "Indigestion." Both topics were real interesting and a number of members participated in the discussion.

FRED E. BRAMMER, *Secretary.*

CABELL COUNTY

A called meeting of the Cabell County Medical Society was held at the Hotel Pritchard, Huntington, on the evening of July 20 for the purpose of discussing the care of the indigent sick in the community. There was a good turnout for this meeting and a splendid discussion of the subject.

The regular July meeting of the society was held at the Spring Valley Country Club on Thursday, July 13. The feature of this meeting was a Society golf tournament with prizes for the low gross, low net and blind bogie scores.

Dinner was served to the members at 6:30 o'clock.

W. W. STRANGE, *Secretary.*

MERCER COUNTY

A good meeting of the Mercer County Medical Society was held at Bluefield on the evening of June 22 with an unusually fine attendance. The society received with pleasure an invitation from the Clinch Valley Medical Society of Virginia to attend a prenatal and obstetric clinic to be given by members of the staff of the University of Virginia.

The program consisted of an address on Associated Hospitals, Incorporated, with its aims and working plans, by Dr. Albert H. Hoge and Dr. R. O. Rogers, Bluefield. There was a very free discussion of this new form of hospital insurance.

"An Analysis of 298 Cases of Operations on the Gall-Bladder with Certain Conclusions as to Operative Procedure" was given by Dr. Wade H. St. Clair, Bluefield. This was a very clear and comprehensive study of the subject and brought out an unusual lot of discussion.

Commenting on the invitation of the Clinch Valley Society, Dr. Harry G. Steele stated that the course would last for 10 weeks and would be held in Tazewell County, Virginia, each Monday. Dr. Steele stated that he had been working on a similar plan for the counties of Southern West Virginia but he felt the expense would be too great at the present time.

Following adjournment of the meeting, a luncheon was served to the members present.

R. R. STUART, *Secretary.*

FAYETTE COUNTY

An excellent meeting of the Fayette County Medical Society was held at Oak Hill on the evening of July 11 with a good attendance. Dr. J. B. Woodville, Jr., of Brooklyn was received as a member of the society.

Following a general discussion on the subject of medical economics, the scientific program was presented. The essayist of the evening was Dr. Harry G. Steele, Bluefield, who gave a splendid paper on "Practical Points in Obstetrics." A free discussion followed.

Visitors included Dr. S. J. Kell, Bluefield, and Dr. J. S. Hill, Mabscott.

RALPH HOGSHEAD, *Secretary.*

DR. HARVEY C. POWELL

Dr. Harvey C. Powell, 52, widely known Morgantown physician, died at his home there on June 30 of primary carcinoma of the liver. He had been in active practice in Morgantown for almost 30 years and his death was a distinct loss to the medical profession of Monongalia County.

Dr. Powell graduated from West Virginia University in 1900 and two years later received his medical degree from the Baltimore Medical College. Following a brief period in the West, he came to Morgantown in 1905 and followed his profession there until his death. He was one of the most active members of his county medical society and was held in the highest esteem by his medical confreres.

Dr. Powell is survived by his widow and his mother. Funeral services were held on July 3.

WOMAN'S AUXILIARY

McDOWELL COUNTY AUXILIARY

The Woman's Auxiliary to the McDowell Medical Society met at the Appalachian Community Room, Welch, on June 13, with the following members present:

Mesdames W. E. Dickerson, H. P. Evans, W. B. Stevens, W. C. Vick, Harry G. Camper, C. F. Johnston, C. R. Hughes, R. V. Shanklin, A. G. Rutherford, J. L. Sameth, H. A. Bracey, W. P. Beane and W. L. Peck.

A delicious luncheon was served following which the meeting was called to order by the president, Mrs. W. B. Stevens. Minutes of the past meeting were read and approved and the treasurer reported the amount of $46.74 in the treasury. A resignation from the first vice-president was read and accepted and Mrs. H. P. Evans was appointed to fill the vacancy. Mrs. Evans presented a very interesting report of the meeting held in Charleston in May.

During the business session it was decided to treat the unfortunate children of the county to an afternoon of "swimming" at the community swimming pool. Mrs. W. E. Dickerson was appointed chairman of the committee to arrange the details.

There being no further business the meeting adjourned, the next meeting of the Auxiliary to be held in October.

MRS. CECIL F. JOHNSTON, *Secretary*.

NINTH ANNUAL MEETING

The Ninth Annual meeting of the Woman's Auxiliary to the West Virginia State Medical Association convened in Charleston at the Daniel Boone Hotel May 22 to 24, 1933.

On the evening of the 22nd, a lovely reception was given at the hotel followed by a bridge party in the card room. In the receiving line were four past presidents of the Auxiliary, Mrs. A. G. Rutherford, of Welch; Mrs. J. P. Lilly, of Morgantown; Mrs. W. C. Swann of Huntington; and Mrs. S. S. Hall of Fairmont. Mrs. H. T. Phillips, Wheeling, the retiring president and Mrs. F. V. Langfitt, Clarksburg, the incoming president, were also in the receiving line.

Tuesday morning the general session began with Mrs. Phillips in the chair. This session was occupied with reports from all committees, and the new revised constitution was read and accepted. This morning session was concluded with a luncheon tendered all visitors by the Kanawha Auxiliary at the Woman's Club. Honored guests were Mrs. H. G. Kump, the wife of the Governor of the State, Dr. D. A. MacGregor, President of the State Association, Dr. W. E. Vest, Dr. B. S. Drake and Dr. R. H. Boice, members of the Advisory Board.

Following the luncheon, an extensive trip through the new state capitol and governor's mansion was made. The Kanawha County Auxiliary concluded the day's most hospitable entertainment with a lovely tea at "Journey's End," the beautiful home of Dr. and Mrs. John E. Cannaday.

The Wednesday morning meeting was concerned with county reports. The State membership for 1932-1933 was 203. The new officers were elected as follows: Mrs. M. F. Petersen, Charleston, President-elect; Mrs. S. M. Prunty, Parkersburg, 1st Vice-President; Mrs. John Gilmore, Wheeling, 2nd Vice President; Mrs. W. B. Stevens, Kimball, 3rd Vice President; Mrs. James S. Klumpp, Huntington, Recording Secretary; Mrs. C. C. Romine, Morgantown, Treasurer. The appointees were as follows: Mrs. E. N. Flowers, Clarksburg, corresponding secretary; Mrs. C. E. Copeland, Charleston, state historian; Mrs. V. E. Holcombe, Charleston, press and publicity; Mrs. Charles Parks, Fairmont, Public Health and Relations; Mrs. S. S. Hall, Fairmont, Legislative and Revision; Mrs. R. H. Edmundson, Morgantown, Parliamentarian; Mrs. Fred Brammer, Huntington, Hygeia Chairman.

Dr. Robert J. Reed, Jr., read a most interesting paper on Birth Control, which concluded the morning meeting. Immediately after the adjournment at the hotel, the Auxiliary reconvened at the Tally Ho Tea Room for the farewell luncheon. Here Mrs. Phillips, the outgoing president, was presented with a lovely piece of silver by the last past-president, Mrs. Sobisca S. Hall. The new president, Mrs. Frank V. Langfitt, was introduced and she presented her new Board. Mrs. S. W. Price, a member of the Legislature, gave excerpts of her recent speech pleading for an appropriation to be used in checking syphilis.

On Wednesday evening the Woman's Auxiliary joined the West Virginia State Medical Association in the annual banquet and dance, which was a most satisfying and delightful climax to the state convention.

MRS. JAMES S. KLUMPP, *Recording Secretary*.

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INFANT MORTALITY—A SENSITIVE INDEX OF SOCIAL WELFARE*

By GEO. M. LYON, M. D.,
Huntington, W. Va.

APPROXIMATELY one year ago the Chamber of Commerce of Huntington and the City Department of Health were advised of the fact that Huntington had had a very high infant mortality rate in 1931. From a study of official records as published by the United States Census Bureau, the American Child Health Association revealed the fact that, in the population group for cities of 75,000 to 250,000 for 1931, Huntington had reported the highest urban infant mortality rate with 96 infant deaths per 1,000 live births. During the same year Charleston with a rate of 128 was highest in the 50,000 to 75,000 population group.

The urban infant mortality rate is the rate reported by cities of 10,000 or more in the United States Birth Registration Area. The ordinary infant mortality rate reported for a state includes not only the urban areas but the rural areas as well. States are also studied as to the infant mortality rates of their cities of 10,000 or more and this is referred to as the urban infant mortality of the state. In ordinary state wide infant mortality rates West Virginia was exceeded by only 4 states in 1930 and by only 6 in 1931. In urban infant mortality rates West Virginia was exceeded by only 1 state in 1930 and by only two states in 1931 according to the urban infant mortality survey published by the American Child Health Association for the respective year.

I should like to call your attention to a mistake which in some manner crept into an editorial of the *Herald-Dispatch* of this morning's issue. Huntington and Charleston did not have the highest rates for cities of over 10,000. It was in the population group 75,000 to 250,000 that Huntington was high and it was in the population group 50,000 to 75,000 that Charleston was high. These figures furthermore relate to the year 1931.

At this point of our discussion it would be well to consider a few of the rather technical characteristics of vital statistics which should be borne in mind. Vital statistics would be more representative if non-resident births and deaths were charged back to their place of residence, the so-called corrected rate as opposed to the uncorrected or crude rate. In most places the "corrected rates" are not materially different from the "crude rates" while in other places there may be the

*Address before the Huntington Welfare Conference, Huntington, W. Va., April 7, 1933.

greatest of variation. One other point to be borne in mind is that conditions quite outside of public or personal health efforts influence the magnitude of the rate, and therefore the rates themselves should be used with great caution as indices of the public health efforts of communities. They are apt to be very suggestive of conditions which demand attention. Climate, industry, local customs, economic status, all influence the baby death rate apart from such factors as the quality of the milk and water supplies, sanitary efforts and the thoroughness of the prenatal and infant welfare programs. It will be of great service to health officers and others, when the relative influence of these various factors is better known. Then, with correction factors for unusual environmental conditions, the adjusted rates may prove more useful as a comparative measure of public health efforts. Some cities have greater handicaps to combat because of proximity to specially infected areas that act as foci of infection, or because of peculiar racial composition or unusual geographic endowment, all of which must be borne in mind. A community with a rate of 50 may be deserving of less commendation than a city with a rate of 70 if the former is endowed with geographic, climatic, racial and socio-economic factors which tend to permit low infant mortality rates whereas the city with a rate of 70 may have just the opposite factors operative and yet striving as heroically as it may, it may only be able to keep the rate at 70. With the same effort put forth by the city with a rate of 50 it might possibly have a rate of 200 or more. Local studies whenever possible to have them carried out will help much to set forth just what these special handicaps are and possibly a better manner of comparison can be developed wherein communities are judged by their handicaps, and their efforts to overcome them quite as much as by the relatively low rate to which they aim to reach. The city in the south with a large colored population which presents a colored infant mortality rate twice that of the whites, presents a problem not encountered in the middlewestern city of a comparable size. Likewise the city in or near the dysentery ridden mountainous sections of southern West Virginia has a very real and important handicap to overcome which its more northernly situated brother does not have to meet. Such cities should not however, admit their handicaps and point them out in lieu of honest efforts to combat these handicaps. Sanitation of an appropriate type continues to be an effective weapon in a struggle of this kind. Rural infant mortality rates tend to exceed urban mortality rates and in the larger cities where congestion is quite great and sanitation of the best, are generally to be found the lowest of the urban infant mortality rates. The usefulness of a study of infant mortality rates is nowhere better seen than in the effectiveness of promoting interest in inter-city infant mortality contests as are held each year by the American Child Health Association and the National Chamber of Commerce. In cities where excessive mortality rates are found, the unfavorable publicity of such generally lights up the interest of the community and they attempt to take an inventory to ascertain if possible wherein the difficulty lies and if so to correct it or if it happens to be an anomaly or an 'artefac', attempt to explain their position in respect to this peculiarity. The cold fact still remains that as a general rule no causes of infant mortality are more striking than those must ugly ones, poverty and ignorance.

Sir Arthur Newsholme, the emminent British authority on the social aspects of public health, in speaking of infant mortality said, "Infant mortality is the most sensitive index we possess of social welfare and of sanitary administration under urban conditions." At another time he said, "Domestic and municipal uncleanliness act and react upon each other." At still another time he said, "A high infant death rate in a given community implies in general a high death rate in the next four years of life while low death rates at both age periods are similarly associated."

Sir John Simon pointed out that a high infant mortality rate almost necessarily denotes

a prevalence of those causes and conditions which in the long run determine a degeneration of race and further that a high death rate in infants is an indication of the existence of evil conditions in the homes of the people who are after all the vitals of the nation.

Sir Leslie Mackenzie said, "Houses can be classified according to the effects they accomodate but they can also be classified according to the effects on the children. If the family is the growing point of society, the child is the growing point of the family. If you can not understand social institutions unless you realize that they have their roots in the needs of the family, neither can you understand the functions of the family without realizing that they have their roots in the needs of the children."

Dr. Emmet Holt, the senior, said: "A high infant mortality results in a sacrifice of the unfortunate,—not the unfit." Some of the philosophical biologists have at various times claimed this was Nature's way of removing the unfit in an attempt to balance the population trends. We know this position to be untenable because of the recorded observations of the last half century's progress in reducing the infant mortality rates. Dr. Holt has also said that a high infant mortality rate in a community also indicates a high 'damage' rate among the youthful population as well. This we have observed repeatedly and recognize to be of great economic as well as humanitarian importance.

It has not been many months since Huntington was shocked by the information that it had the highest infant death rate of any city in the United States Registration Area for 1931 in the population group for cities of from 75,000 to 250,000. A study of the published reports of the United States Census Bureau for the six year period 1926-31 reveals that West Virginia has been well near the top of the list in infant mortality rates each year during that time.

If we agree with Sir Arthur Newsholme that the infant mortality rate is the most sensitive index of social welfare and of sanitary administration under urban conditions, and if we accept the data above presented from the official statistics, we must admit that we are thrown a challenge which should not go unanswered by the leaders of our community. Some of these efforts must of necessity depend upon a technical study which must be presented by those of the medical profession. Much of the efforts and all of their translation into activity must be carried on by civic and social leaders of the community.

In proceeding with such a study one must be cautious in drawing conclusions from the crude mortality rates as published. While they constitute the most sensitive index we possess of social welfare and sanitation it must be admitted that no very sensitive index is at our disposal and that while this is the best it is still a rather crude one with definite limitations. Figures may tell startling lies as well as strange truths. Their greatest value is in showing trends from year to year and in focusing the interest of the members of the reported communities on infant mortality as an important social problem in their midst.

In the technical consideration of the problem, we may best start by dividing the first two years of life into two age periods, one the 'neonatal' period from birth to one month and the other the period of infancy proper from one month to either one year or two years (preferably the latter). We may then study the seasonal curves for the deaths occurring in these age periods and we may obtain valuable information if the study includes enough years to have the total number of deaths exceed the limitations necessarily imposed by an actually small number. By this means we can obtain reliable information as to the role played by (1) infections of the respiratory tract (winter) and (2) infections of the intestinal tract (summer). We may study the effects of the extremes of climatic conditions and season upon deaths in the neonatal period and as to deaths in the period of infancy proper. The curves for each age group from year to year indicate the trend of improvement which may be taking place within that particular group. It is advisable to refer these death rates to both live births per

year and population of the city at the time the rate is reported. Improvement in the still-birth and neonatal period may be indicative of better prenatal and maternal care but we have already seen in studies of other communities and for the country at large that there has been little improvement in the neonatal death rate in the last two decades or more. Quite the opposite is true however, in the age period 1 month to 1 year in which there has been a most dramatic reduction in death rates in the last 2 to 5 decades.

Infant mortality rates as published in official reports indicate deaths under 1 year of age per 1,000 live births per year. Rarely are they referred to as deaths per 10,000 population per year. As pointed out earlier in this discussion there is a very valuable reason for dividing the groups into the two age periods, 0 to 1 month and 1 month to 2 years. This is not done in official figures published at present and special studies must be made to ascertain such division of deaths.

During the neonatal period the problems of the new-born and of an obstetric nature occupy the major prominence with infection of minor importance and with prenatal environment and physical endowment a prominent determining factor. In the age period 1 month to 2 years infection plays the major role for the infant is not so guarded in his contact with others as is the neonatal babe.

Only those babies may be considered born 'alive' who have actually had respiration started after birth and the lungs to some extent inflated. The fact the heart continues to beat for sometime after delivery is not to be taken as an evidence of a live birth unless respirations have actually started. Not infrequently without respirations starting the heart continues to beat for some time after delivery in what is apparently simply a prolongation of the intrauterine state. Such are classed as 'still births' and should be reported as such. (Some courts have seen fit to rule otherwise in spite of the physiological evidence to the contrary). In this age period and in the neonatal period little of a helpful nature is to be derived from a qualitative analysis of the causes of death as at present entered on the death certificates. In fairness to the certifying physician, it should be clearly set out that it is not necessarily his individual fault that death certificates are at present of little value in this specific respect. The difficulty is more fundamental, going back to the relative lack of accurate scientific knowledge on the causes of morbidity and mortality in the neonatal period. The lack of definite knowledge with regard to causes of death during this period, the lack of uniformity of pathologic and clinical nomenclature for the conditions occurring in this period make it impossible for anyone to draw entirely accurate conclusions as to the important factors involved in any investigation of neo-natal deaths based on a study of reported death certificates. This is a problem which is universal and it is not unique to Huntington. Some valuable implications may however be obtained by the type of curve-study utilized in the work I am reporting to you today.

In a study of neonatal deaths in Huntington during any one year, the investigator is at once confronted from the statistical standpoint with the limitations imposed by an actually small number of deaths. Total neonatal deaths in Huntington from 1922 to 1932 are by years from 1922,—85, 76, 71, 98, 91, 82, 70, 65, 64, 66. During the same years live births went from 1112 in 1922 to a peak of 1739 in 1925 and receded gradually to 1283 in 1931. Still births were 95 in 1922, 103 in 1924, 94 in 1927 and 75 in 1931. In general the trends over the 10 year period paralleled each other closely there being a tendency to a lowered rate in each case toward the latter half of the decade. In the meanwhile the population is reported to have increased at a rate proportionate to the 52% increased population rate of 1930 over 1920. The average neonatal death rate per year for the period was 53.2 neonatal deaths per 1,000 live births per year.

If we assume that the entire socio-economic structure consists of five levels or groups with group I representing the highest and group V representing the lowest, it can be said that

we observed actually a higher mortality in the neonatal period in the lower groups IV-V than in the higher groups I-II. Such an observation can not be accurate if observed for just one month or for one year but it can be considered fairly true if carried out over a period of 10 years. Dr. Robert Mussey, Professor of Obstetrics at the University of Minnesota and the Mayo Clinic, in reporting for a sub-committee of the White House Conference on Child Health and Protection, said, "Statistical data reveal a distinct lowering of infant death rates, but little satisfaction may be gathered from the lack of improvement, fetal and early mortality rate. It is evident that more statistical data are necessary to clarify the relative influence of the factors causing this mortality." The neonatal death rate in the United States is said to be in excess of what it should be considering the alleged state of enlightenment said to be attained in this country. This constitutes a social problem which is national in scope and in which Huntington shares in about its expected proportion; certainly there is no great excess above the average from the country at large in this respect. In Huntington a seasonal rise in the neonatal death rate is observed during the winter months especially during January and February. It is logical to assume that these deaths are in the main due to lowered vitalities endowed by mothers who have been suffering from acute respiratory infection so prevalent during that period of the year. To a lesser extent respiratory infections contribute directly to the neonatal death rate by infections of the babe. A lesser rise appears in the summer months of July and August and is in all likelihood due to the enervating influence of the extreme weather on the mother during the period she is carrying the baby.

It is of interest to note that in 1930 Huntington reported a still birth rate 16% higher than the average urban rate of the country, a neonatal rate 32% higher and a rate from 1 month to 1 year 68% higher. This marked excess of deaths in the latter period indicates just wherein we face our real problem in Huntington. Between the ages of 1 month and 1 year and the ages 1 month and 2 years, the greatest deviation from national averages occurs.

When the curves representing deaths between 1 month and 2 years or infancy proper are studied we see that 1923 with 171 represents the peak with 1925 next with 136 following which the trend has been toward a greatly lower rate with 79, 81 and 83 recorded in the years 1927, 1928 and 1931 respectively. This may be considered an indication that Huntington is a much safer community to have a baby spend his first two years of life than was the case 10 years ago. As to seasonal trends, there occurs a slight increase in the infant mortality rate for this age period in the winter months reaching the peak in January and February. This small increase of deaths in these months may safely be attributed to respiratory infection deaths such as pneumonias, colds and their complications, etc. In the summer months of July, August and September a most startling increase in infant deaths in this age period is to be noted. This excess of deaths in the summer months occurs with regularity each year and in the main explains the unfavorable position of Huntington as regards infant mortality statistics. The winter time increase in infant deaths is much lower than is to be observed in more northernly situated cities and is an index of the favorableness of the Huntington climate to infant welfare in the winter months. This is contrary to the popular notion locally that Huntington has a wretched winter time climate with an undue number of infant sicknesses and deaths at this period of the year. It must be said that the infant death rate as reported by official figures would tend to obscure the good influence of the winter season and at the height of the summer peak our summer time rate is even more ugly than would be indicated by the composite death rate of the year, not studied on a seasonal basis. The disadvantageous position presented by a very high diarrheal death rate in the summer is to a great extent offset by a relatively low respir-

atory death rate in the winter months. Wheeling exhibits a curve notably different in that the summer time elevation is much less there and the winter time elevation considerably higher than ours. A practical point to emphasize here is that in the main it is difficult to influence respiratory death rates by any known means whereas by means of education and sanitation it is possible almost entirely to wipe out the excess of diarrheal deaths in the summer time. Respiratory deaths are little preventable while diarrheal deaths are in the main preventable and their existence a stigma on the social endeavor of the community. This applies with full force to our Huntington situation.

Huntington had a population of 50,000 in 1920 and of 76,000 in 1930. The colored population is reported as 4,600 or about 5.8%. The population increase in 10 years was 52%. Residents of Wayne County in Huntington have not been included in this statistical study.

Even if we assumed that the high infant mortality rates characteristic of the colored race in the South prevailed in Huntington (where it is essentially the same as for the whites in Huntington) this would only explain about 10% of our high infant mortality rate and so this as a largely active contributing factor can be ruled out. It is impossible to go into all the various factors which contribute to a large infant mortality rate, it is well to state that socio-economic status, crowding, habits of hygiene, etc. are all factors of importance.

It would be well to point out here that between 1922 and 1932 the neonatal rate remained rather constant with a slight tendency to a lowered level and that diarrheal diseases and respiratory diseases were both more active in the period 1922-1927 than in the period 1927-1932.

From a study of infant mortality curves in Huntington for the period 1922-1932, we are forced to the conclusion that while our neonatal death rate is somewhat in excess of the average for comparable cities, yet there is a marked excess of deaths in the age period 1 month to 1 year and 1 month to 2 years. This excess is in the main due to diarrheal disease rather than to respiratory disease. The high summer time death rate is 'presumptive evidence' that bacillary dysentery is the main factor active in the production of a high death rate among infants in Huntington during the period 1922-1932.

As the above is undoubtedly true it is of interest to review here a study of bacillary dysentery in Huntington made between the years 1921 and 1931. Dysentery was observed as a relatively frequent offender in the lives of 300 normal children observed during the first five years of their life in Huntington. The births of these children took place between 1921 and 1926 and the period of the last fifth year observation really came in 1931. From the Baby Clinic of the Huntington Mothers' Club similarly 100 normal children were observed during the same time and in the same manner so as to be thoroughly comparable. All children were observed from shortly after birth until 5 years of age. If one had dysentery during the period of observation a black mark was put down for him. If he were a private patient and had dysentery a black circle was put at his place of residence on a spot map prepared for the study. If he were a baby from the Baby Clinic and had dysentery a black triangle was put on the map at his then place of residence. If at the end of 5 years the child had not had dysentery he was given either a plain circle or a plain triangle at his proper place of residence. The presence of loose stools with blood, pus and mucus was considered necessary to make the diagnosis certain and it had to be observed by the physician actively in charge of the case so that there would be no irregularities introduced into the study in this manner. Histories of blood and pus in the stools when not observed were not considered as certain enough to permit of a diagnosis and were entered accordingly. The children represented by the circles in the main represent families in the socio-economic groups I, II and III whereas those of the triangles represent groups IV and V, mainly the latter. On the tables are

shown the districts studied and the percentage of children having dysentery in the particular section of the city set forth. Just as the rash in measles is a symptom of the malady in the individual, so is the evidence provided by this study of the city of Huntington a 'symptom' of a real social malady in the city of Huntington. The black spots on the map indicate with uncanny accuracy the regions of the city in which the disposal of human sewage is carried on in an insanitary manner. Facts coincide absolutely with the 'presumptive evidence' supplied by this map. It must be stated however, that this study was started in 1921 and that much of it was completed by 1926 and that many improvements in sanitary conditions in the city have been made in that time. The yearly curve bears evidence of this activity in the improvement shown in the fall in infant mortality rates from 1923 to the present. Even with this true and with due regard for our improvement, yet in one of the best and lowest of our years of recorded infant deaths, we were cited as having the highest urban infant mortality rate of any city with a population between 75,000 and 250,000.

We can make progress when we recognize the problem as a social one, and appreciate the significance of a high diarrheal death rate in infancy in Huntington, as a sensitive index of our social welfare and sanitary administration under urban conditions. An enlightened, sympathetic and active public opinion is now what is needed to correct these conditions. No enforcement no matter how rigid can clear up the situation without the wholehearted sympathy, and the intelligent and active coöperation of the public, not for one week or one month but continuously year in and year out.

In summary of my discussion let me say that vital statistics and infant mortality rates are helpful in studying mortality trends and in calling attention to excessive divergence in rates in the communities concerned and in stimulating them to analyze their own locally active factors for correction or explanation. The crude rate itself does certainly not tell the whole story.

In Huntington, the still birth and neonatal mortality rate is only slightly above the expected average. Deaths between 1 month and 2 years are excessively high especially in the summer months and represent the explanation of the excessively high infant mortality rates for the city. The deaths in this age period are relatively low in the winter months but excessively high in the summer months. Bacillary dysentery or infectious diarrhea is the cause of most of the deaths in the age period 1 month to 2 years in Huntington.

A spot map and tables show the sections of the city and indicate in which sections dysentery was most frequently observed. This was considered as 'presumptive evidence' that faulty protection of human excreta in the process of disposal existed in these sections particularly.

Milk and water were not observed to have acted as carriers of dysentery in this study although both have been at times known to have carried the diseases in other places by other observers. Dysentery is especially common in all of the hilly counties adjoining and including Cabell.

The fly is believed to have been the most active factor in the dissemination of the infection. The ideal combination for the spread of the disease is *proximity to an active case* in the neighborhood plus *insanitary sewage disposal* plus a *heavy fly infestation* plus *crowded, unhygienic surroundings* plus *poverty* plus a *warm moist summer season.*

Just as flies are observed in many Huntington homes throughout the year, so is dysentery to be found in Huntington throughout the year.

The need for a campaign for 100% sanitation in the city and a ceaseless fight against the fly in all quarters would seem to be clearly indicated from the careful study that has been made of this grave social problem in Huntington.

In conclusion therefore, with the recom-

mendation already so obvious may I emphasize the fact that coöperation of the Health Department is of course most valuable but can accomplish relatively little unless an enlightened, sympathetic and active public supply the support which can make possible the provision of a safer place for the babies of Huntington to live in. If in your home sewage disposal is a health menace, by what possible stretch of the imagination can you desire to maintain it as such at the possible cost of life to another if not yourself? This is truly a social problem of vital importance and is a real challenge to us all.

TABLE I

Districts Studied Represented on Map By Numerals	Children Studied Total	Children Who Had Dysentery	Percentage Who Had Dysentery	Social Group of Family of Child Included in Study	Social Groups Prevailing in the District Studied
1. West End	34	16	47%	III, IV, V	II, III
2. Central	47	15	32%	II, III	II, III
3. East End	16	10	62%	IV, V	III
4. Southside	106	16	15%	I, II	I, II
5. Four Pole-Park	19	10	52%	I	I
6. Pottery	9	5	56%	III, IV, V	III
7. C & O Shops	17	10	58%	IV, V	III
8. Walnut Hills	16	11	68%	IV, V	II, III
9. Highlawn	26	11	43%	III, IV, V	II, III
10. Guyandot	10	7	70%	III, IV, V	II, III

300 children were observed and of these 111 or 37% had dysentery with blood, pus and mucus.

TABLE II

Districts Studied Represented on Map By Numerals	Children Studied Total	Children Who Had Dysentery	Percentage Who Had Dysentery	Social Group of Family of Child Included in Study	Social Groups Prevailing in the District Studied
5. A & B Street	8	6	75%	V	V
3. Maple Avenue	8	5	62.5%	IV	V
6. Ohio Ave.—Johnson Land	40	34	80.5%	V	V
1. West End	20	12	60%	IV, V	V
2. C & O Shops	10	6	60%	IV, V	V
4. Guyandot	14	9	64.3%	V	V

100 children were observed and of these 72 or 72% had dysentery with blood, pus and mucus.

FACIAL EXPRESSION

Malocclusion is a term referring to the "rabbit-faced" individual whose upper teeth and gums are so prominent as to hang out over the lower jaw; to the "chisel-chin" type whose protruding lower jaw gives a pugnacious appearance; to the chinless or "Andy Gump" type whose ailment is a much underdeveloped lower jaw, and to the person whose upper jaw may be underdeveloped. In fact, malocclusion refers to any abnormality in the positions of the teeth, jaws or their respective dental arches, Robert H. Brotman, D.D.S., explains in "The Effect of Teeth on Facial Expression," an article appearing in the August *Hygeia*.

Premature loss of temporary teeth, retention of temporary teeth too long, any continuous pressure on the mouth, or mouth breathing may cause malocclusion.

Habits such as the use of pacifiers, thumb or finger sucking, muscular twitching or pressure on any section of the dental arches, and pillowing may also bring about malocclusion.

MEDICAL SERVICE*

By D. A. MacGregor, M. D.,
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Wheeling, W. Va.

I LIKE the title of my address—Medical Service. Service is the ultimate object of this whole conference. We aim to serve the best interests of children generally and specifically the children of West Virginia. Children are served by many agencies, but it is my province to address you on one phase only—the service rendered by medical science and medical art, acting through the agencies of physicians, surgeons, nurses, hospitals, and special institutions.

For several months past various committees composed of physicians have been at work securing and compiling data relating to the medical service which is being rendered to the children of West Virginia at the present time. These various committees have been appointed, guided, and assisted by one man to whom great credit is due. Certainly Governor Conley was most fortunate in his selection of Dr. George M. Lyon as Chairman of the Executive Committee. To Dr. Lyon's untiring efforts is due in large measure the success of the West Virginia White House Conference.

The several committees of physicians have by various methods secured a large amount of statistical data concerned with medical service to the children of West Virginia. This immense amount of material has been analyzed and classified. From the information at hand certain conclusions and recommendations have been made. In the short time at my disposal it is manifestly impossible for me to do more than mention in the briefest possible way these conclusions and recommendations. The complete reports will be compiled and made available for reference. It is difficult in making such abstracts to be certain that the true meaning and intent of the committee is conveyed accurately. If in any case I should give a wrong impression, I beg to assure you that any failure or mistake is unintentional.

However skillful and however conscientious the physician may be, all his efforts will be unavailing unless orders for care and treatment can be carried out correctly. The carrying out of these orders depends on the nursing facilities both in the home and in institutions. In this connection I wish to comment upon the excellent report given by Miss Margaret Lambert of the Huntington Memorial Hospital. This report is of such great value that I hope it will be published in its entirety and made available to all interested. I cannot refrain from quoting the summary in which Miss Lambert analyzes the facilities for hospitalization and nursing care of children in West Virginia:

"There are all extremes, from nurses training schools which fail to provide adequate pediatric training at all, up to four or five schools which provide relatively acceptable training in pediatrics with a sufficient volume of pediatric and newborn cases and with a properly trained and professionally interested teaching staff. Instruction in pediatrics in some of the West Virginia training schools is excellent, while in others the small volume of pediatric and newborn cases, the lack of interest in pediatric cases of the medical and nursing staff, and the lack of appropriate training of the staff are so great as to merit their outright discontinuance as a training school for nurses. The care of obstetric cases and of pediatric cases constitutes an appreciably large portion of the work and opportunity of the graduate nurse in private practice, and it is only fair to the girl who spends three years in training that she be properly trained

*Read before the W. Va. White House Conference, May 30, 1933.

in this phase of nursing activity for which she is so apt to be needed when she attempts to practice her professional work after graduation. Availability of good pediatric nursing in West Virginia is not as adequate as it should be."

This appraisal of pediatric nursing in West Virginia made by an impartial and conscientious expert should influence delinquent hospitals to take the necessary steps to correct their glaring defects. While it is far from agreeable to be told unpleasant truths, yet after all the aim of the conference is to discover faults and advise methods for their correction. To sugar-coat the bitter pill would not be the way to render the best service to our children. Special attention should be directed to the entirely inadequate training in contagious diseases provided the student nurses in our West Virginia hospitals, also to similarly inadequate training in the care of premature infants. The fate of the premature infant depends almost entirely on skillful, conscientious nursing care, and without adequate instruction in this most specialized branch of pediatric nursing many lives will be lost that with proper care might be saved. It is recommended by the committee that hospitals unable to give adequate training in pediatric nursing, particularly in the care of contagious diseases and of premature infants, affiliate with hospitals in the larger cities (particularly with hospitals connected with teaching institutions) in order to secure for their students a complete and well-rounded course.

More and more the public is appreciating the advantages of hospitalization for patients requiring both medical and surgical treatment. Certainly hospitalization is just as important for children as for adults. The report of the committee on hospital facilities would indicate that in many sections of West Virginia hospital beds for children are not available and that it is most important that such hospital facilities should be provided. This committee calls attention also to the inadequate provision for the care of communicable diseases and premature infants.

One very essential branch of hospital service is almost entirely lacking in West Virginia—that is, the social service department. There is a crying need for social service workers, particularly for work among children. May I suggest in this connection that social service work demands a very special preparatory training and that graduation from a nurses training school, however excellent that training school may be, does not prepare a nurse for this highly specialized type of work?

We are all interested in the excellent work that is being done for the crippled children of West Virginia. This work began in July, 1929, when the State Legislature made a liberal appropriation for aid in the care of these unfortunates. The committee states that "up to the present time 1,741 crippled children . . . . have been examined, and of this number 806 have received treatment." The committee points out mistakes in the selection of cases for treatment, due to ignorance on the part of certain directors of the movement and to other faults in the management of the patients. Therefore, the committee recommends that the State care of crippled children should be transferred to the Department of Health. It is believed that with such supervision errors and mistakes of the past might be obviated.

Coöperation between the practicing physician and the Health Departments, both state and local, is far from perfect. Unfortunately there is a certain amount of antagonism due in all probability to a lack of mutual understanding. The practicing physicians take the stand that the function of the Health Department should be administrative and educational and that the health officer should be coöperative and something more than a police officer and detective. They feel that direct service should not be rendered by the Health Department except to those unable financially to purchase such service. I quote from the report: "Physicians will coöperate one hundred per cent when the health officer shows interest in their individual health problems . . . . being part of the county society,

always willing to go into consultation as a health officer . . . . inviting them to participate in clinics, carrying on a proper health educational program . . . . "

It is suggested that a portion of the service work now carried on by Health Departments be returned to the practicing physicians. This is an excellent suggestion and, if carried out, would doubtless create a much better feeling between these two medical groups.

The committee on welfare supervision and immunization has made a most interesting and enlightening report. The more important recommendations made by this committee are presented as follows:

(1) An extensive educational campaign to impress upon the public (physicians included) the importance of periodic health examinations and immunization work.

(2) Free immunization of all indigent children.

(3) Strict limitation of such service to those unable to pay.

(4) A public health law requiring a certificate of successful immunization against smallpox and diphtheria for admission to kindergarten and school.

The State Department of Free Schools has certain objectives in view for safeguarding the health of school children, which may be summarized as follows:

(1) To teach children the principles of healthful living.

(2) To prevent and control communicable diseases.

(3) To detect and secure correction of remediable physical defects.

(4) To reduce the number of absences and the number of those who repeat grades.

(5) To secure proper sanitation of school buildings and grounds.

(6) To safeguard the health of those participating in athletic contests.

These objectives have been carried out to a certain extent in some of the schools but by no means in all, and in very few of these entirely.

The Committee reporting on this plan of medical service is of the opinion that the value of immunization for control of certain communicable diseases has been amply demonstrated so that educational free immunization programs are no longer necessary or desirable.

School health examinations disclose many remediable physical defects, an average of about two to each child examined. It is within the province of the school authorities to urge the parents that such defects be corrected. However, the right to give such advice must be based upon accurate information secured by a thorough and complete physical examination made by a competent physician.

The feeble-minded child and the epileptic child are ever-present, serious, medical problems, both as regards the individual child and the community. Facilities for the institutional care of such children are exceedingly meager in West Virginia. Most of them are under the care of the general practitioners. At the present time the average practitioner is not trained and equipped to care for these unfortunates properly, and he does not take a very great interest in their welfare. Even the patients who are admitted to our State institutions receive no real scientific study or curative medical treatment. They are simply fed and housed in an unfavorable environment. In this report it is impossible to do more than simply point out the seriousness of the problem, toward the solution of which little or nothing of value has been accomplished.

At this closing session of the West Virginia White House Conference on Child Health and Protection we realize that a wealth of statistical information and suggestions for advancement have been brought forward by the host of earnest men and women who realize the importance of our problem. We hope that this information and these suggestions will not be laid away to gather dust in musty files. This good work must go on—these efforts must bear fruit.

In this connection let me emphasize one point which I believe is important. The activities of the various organizations and individuals interested in the problems of the children of our State should be coördinated,

correlated, and guided by one central authority in so far as that is feasible. Working independently without guidance, there is bound to be overlapping of activities, much lost motion, and almost inevitably a certain amount of rivalry and jealousy. I believe that the Continuation Committee of this Conference will be able to outline a workable plan for all of the social and professional agencies concerned in this work, and further that the State-wide administration of such a plan should be entrusted to a single executive organization—probably and preferably a non-partisan State Health Council.

THE ACUTE SURGICAL ABDOMEN*

By M. A. SLOCUM, M. D.
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I ASSUME, in addressing you this evening, that many of you are engaged in the general practice of medicine. May I say in advance that I am not unmindful of the problems that confront you all, not only in diagnosing the so-called "acute abdomen", but also in the many difficulties that you meet in convincing patients that hospitalization is essential to their welfare.

The correct diagnosis of acute abdominal conditions is by no means always an easy matter to the well trained surgeon, surrounded in his hospital with all of the modern diagnostic aids. He is too often prone to overlook the fact that the physician in general practice seldom has these aids available, and must of necessity attempt a diagnosis based on the history and physical findings alone.

If I may be so bold as to criticise my surgical brethern, I would say that far too little credit ever goes to the man who makes a correct diagnosis, even if only to label the case an "acute abdomen". I am strongly of the opinion that it is the bounden duty of the surgeon to make clear to the patient or his family that his physician has played as great a part in his recovery as the surgeon himself. Too often the dramatic recovery following operation limits the patient's appreciation to the surgeon alone, whereas he should bestow his undying gratitude upon his family doctor for having made the diagnosis that led up to the operation that saved his life. Moreover, I consider the greatly unequal remuneration that the referring physician and the surgeon receive, most unfair. The wrongful practice of fee splitting has been kept alive, to a great extent, by the system by which the family doctor receives, we will say, a fee of three dollars for making the diagnosis of acute appendicitis, while the surgeon receives many times that amount for the operation. We must not forget that had the referring physician not made the diagnosis the surgeon would not get his fee.

Our profession is rightfully concerned with the far too high mortality that follows in the wake of the acute catastrophies that befall the abdomen and its contents. The problem is, how can we reduce this abnormally high mortality figure? Success will come only with the greatest cöoperative effort on the part of the surgeon and the general practitioner.

I shall endeavor tonight to remind you of the commoner pathologic states that involve the abdomen, producing acute symptoms that warn one that surgical intervention is indicated. An attempt will be made to consider these conditions in the order of their frequency. I shall emphasize the fact repeatedly that in many conditions delay, in both diagnosis and hospitalization, exact a heavy toll of life. Diagnostic mistakes are easy to make, but we must recognize that it is far better to err on the wrong side and send a patient to the surgeon unnecessarily than to commit the folly of doing the opposite.

Treatment will be omitted except where it is palliative and preparatory to operative

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measures. Often knowing what not to do is equally as important as knowing what to do. It is unfortunately true that patients acutely ill too often demand that drugs be used. Their faith in medicine leads them blindly to hope that drugs can correct their ailments and prevent the operation they quite naturally dread. However, we must realize that drugs, especially morphine, not only lull the patient and his doctor into a false sense of security, but at times do unremedial harm and contribute greatly to the mortality.

Acute Appendicitis.—The finger of reproach is pointing toward our profession today because of the high mortality that attends this disease in this country, variously estimated at about 20%. The blame for a death from appendicitis can be laid upon one of three sources. The first is the patient. Self treatment and failure to consult a physician too often brings about a fatality that the medical profession can not be charged with. The second is the first physician who sees the case. If he temporizes or fails to diagnose the case correctly, death or a prolonged illness may result. The third is the surgeon. Here experience, skill, and judgment are most essential. These are qualities all surgeons should possess. To know just when to operate, when not to, or just how much surgery should be done may make the difference between recovery and death. Remember that this disease can attack all ages from infancy to extreme old age. It is perhaps most important to remind you first of what not to do. Under no circumstances give a purge or laxative to a patient with acute abdominal pain whether it be acute appendicitis or some other acute catastrophe. Also do not advise an enema. Many acutely inflamed appendices have ruptured because of an enema being given. It is sound treatment to withhold all food or liquids by mouth, this to include even water. Do not give morphine or any other form of sedative. Do not get the ice cap or "freezing out" habit. It is true many cases will subside, but how are you to know them from those that progress to perforation and death? When one reviews the "don'ts", there is left the thought that little remains for the family doctor to do, and this is actually the case. Confine your efforts to making a diagnosis and to urging strongly hospitalization at once. Each hour of delay before surgery is fraught with the greatest peril. Were these few simple "don'ts" and rules observed in each case we would witness a drop in mortality to almost the vanishing point. It is a fact that in the average hospital today there is practically no mortality in that group of cases that are received within the first 24 hours of their illness unpurged and untreated, and operated upon with only average skill. I dwell at length on this subject of acute appendicitis for it is a burning one today. We should all interest ourselves in obtaining a prompt reduction of its disgraceful death rate. Do not forget your duty in educating your practice. Warn all mothers against the iniquitous custom of dosing their children with castor oil every time one of them gets a stomach-ache. Were we to know just how many mothers have thus unwittingly murdered their children, we would indeed be appalled. Therefore, lose no opportunity to enlighten the public upon this subject. It is a proper one for talks before groups of school children, women's clubs, and men's service clubs. Each year I make my house doctors learn, parrot-wise, that little verse of Lord Moynihans' that contains such a world of valuable advise in so few lines. It is as follows:

"Perforation means purgation
The appendix kinked and bad
Foods and drinks they worry him
And aperients drive him mad."

The symptoms of acute appendicitis do vary and are not always all present in a given case. However, most cases do run true to form. The onset will be sudden. Pain always occurs first, usually around the umbilical region. In four to six hours it will shift to the right iliac fossa. Vomiting will then follow the pain but its occurrence and frequency will depend on the length of time intervening between the onset of the disease

and the last meal ingested. The pain may vary from one so slight as to be scarcely noticeable to one of the excruciating type. Examination will reveal perhaps fever up to 99° or 100°. The pulse rate is seldom higher than 90. There will be found rigidity of the right rectus muscle and very definite tenderness over McBurney's point. These findings, with the history, warrant immediate appendectomy, if possible within the first 24 hours. With early diagnosis and early operation, you will witness almost no mortality. However, delay, purgation, temporising with ice and morphine, invite perforation, peritonitis, abscess, prolonged convalescence, if not disaster and death.

Time does not permit consideration of the differential diagnosis in this disease. Suffice it to say we must rule out pyelitis, pneumonia, ureteral calculus, acute salpingitis, and other conditions that do often simulate the picture of acute appendicitis.

Strangulated Hernia.—This condition might properly be considered with intestinal obstruction although the latter does not always follow strangulation. As a rule the symptoms and the examination easily lead to a correct diagnosis. There is usually a history of a previous hernia and perhaps attacks where the strangulation has reduced itself spontaneously. Remember it may occur in infants as well as in adults. Usually you will be told that the rupture will not go back, that there is severe local pain, followed in time by vomiting and obstipation. Do not be mislead if a bowel movement occurs or flatus is passed after the onset of the strangulation, as this merely signifies the emptying of the loop of bowel below the strangulation. Examination will reveal a hard tender mass over the hernial opening and little or no peristalsis will be heard with the stethoscope. There will be little change in the temperature and pulse. Here again what not to do is all-important. Above all do not try forcible reduction or taxis. Do not give enemas or morphine and withhold everything by mouth. Nothing but immediate operative relief of the strangulation will do. Each hour lost is disastrous and invites peritonitis. It is true many cases have been reduced by taxis. But it is unfortunately true also that some of these cases are reduced en-mass and the loop of gangrenous bowel replaced in the abdomen remains gangrenous and a fatality results. In very early cases hot tub baths may be successful. Remember a strangulated hernia may be very small or even just a portion of the bowel wall may be imprisoned (so-called Littres' hernia). In all acute abdominal conditions it is a good habit always to examine all the hernial rings, inguinal, femoral, umbilical, epigastric, and the region around old operative healed scars.

Intestinal Obstruction.—This is a fatal disease always. It demands immediate diagnosis and immediate operation. At the best the mortality is frightfully high even with operation, ranging around 40 to 60%. I know most surgeons would be deeply thankful if they never saw another case of obstruction. However, very early diagnosis, immediate operation, preceded and followed by appropriate treatment will gratify us all by a startling drop in mortality rate.

The causes of obstruction are numerous. I will enumerate only the commoner ones. Since the symptoms are more or less the same the important point is the diagnosis, regardless of the cause, which at times is baffling to discover.

The commonest type is that following strangulation of hernias covered above. Postoperative adhesions come next. Here always remember the significance of an old healed operative scar that so often has adhesions beneath it. This is especially true in the case of pelvic operations in women where a loop of bowel or piece of omentum so often adheres to the suture lines from the operation perhaps done years before. Strangulations of internal hernias must not be forgotten. Gall stones that have ulcerated through into the small bowel may be a cause. Intussusception and volvulus, especially the former in children, are causes. Malignancy of the bowel, especially the annular or constricting cancers of the sigmoid often first announce themselves by producing obstruction. It is well to remember

this fact. I have seen quite a number of these cases where no one suspected the patient had cancer. Mesenteric thrombosis is rare but must be mentioned.

The symptoms of acute intestinal obstruction must be considered only as they are the result of the obstruction itself and not in relation to the condition causing the obstruction. These symptoms are clear cut, well defined, and remarkably constant. They arise from one and only one cause, i.e. the fact that the patency of the bowel lumen is abolished. They vary, depending on the suddenness of the closure, its site, and the degree of impairment in the circulation of the bowel. The outstanding symptoms are pain, nausea, vomiting, stoppage of the stools, distention, general toxemia with rapid feeble pulse, prostration, a clear sensorium, but with elevation of temperature unless the cause is gangrene or peritonitis. The pain at the onset may be mild or excruciating. It may be located at the site of obstruction or general as the result of hyperperistalsis. It is almost always paroxysmal in character. Later pain is less severe and more constant. If gangrene supervenes the pain decreases greatly and one must guard against a false sense of security fostered by the temporary relief. Nausea and vomiting occur early and continue until the obstruction is relieved or death occurs. The vomitus is at first stomach contents only, followed by bile and upper intestinal secretions. As the disease progresses the emesis become dark and of foul odor and in time fecaloid. The amounts vomited at first are large and intermittent. Later the amounts decrease and there occurs almost a constant overflow from the stomach out the mouth of acrid stinking fluid.

Constipation may be a misleading symptom. While nothing can possibly pass the point of mechanical obstruction there may occur one or more spontaneous stools, unloading the bowel below the obstruction. Obstipation is, however, the rule.

Abdominal distention is not characteristic in the early stages of this disease. The thickness of the abdominal wall may make its detection difficult. In 12 to 24 hours, however, the belly takes on a full rounded appearance. The skin appears stretched and the outline of the distended bowel loops may be seen.

The generalized toxemia may come on early if the obstruction is high. It is evidenced by a rise in pulse rate, and a change in quality so that it ultimately becomes very rapid, weak and thready. The blood pressure falls. Excessive muscular weakness and severe prostration follow. The face assumes an anxious suffering appearance. At first the mind is clear. Later delirium is noted. Let me caution you here that if one waits for the tragic picture of toxemia before seeking surgical intervention the prognosis is most unfavorable.

Physical Examination: This gives a fairly typical picture of the condition. At first you will see the patient usually on the back with legs and thighs flexed. The facies suggests suffering. As the disease progresses the picture described above will develop. Palpation reveals a distended abdomen somewhat tender. Perhaps a mass will be felt over a hernial ring or a malignant growth will be detected. Percussion will reveal tympany. Auscultation is never to be neglected as it gives valuable information. In the mechanical type loud rumbling will be heard as the gas above the obstruction makes an active effort to pass. In the paralytic type peristalsis is absent. I shall again emphasize the fact that the important thing is to know you are dealing with an obstruction and that the actual cause is really a minor consideration. Also I will repeat that in delaying operation you are inviting disaster. Each hour is precious. When a diffuse peritonitis appears it is too late for surgery and death is inevitable.

Perforated Peptic Ulcer.—Perforation of a peptic ulcer often occurs without previous symptoms that indicate its existence, although careful and repeated questioning will usually bring to light some digestive disturbances. The onset of this condition is characterized by its dramatic swiftness. A man may be at work and apparently in the best of health when suddenly he is seized with the most violent

and agonizing pain in his epigastrum. He may not be able to move a muscle, is practically frozen in the position the perforation found him. When seen the picture is usually characteristic and the diagnosis easily made. As a rule there is profound shock. The face clearly shows agony and is pale. The skin is clammy. The diaphragm is fixed. Breathing is entirely limited to the thorax. The patient remains almost motionless, with legs drawn upward. He will be fearful of your approach and plead that you do not touch or move him. Vomiting may occur and contain blood. As a rule it is not repeated. On examination the pulse is somewhat weak, perhaps of increased rate. There will be no fever until much later. On palpation one finds board-like rigidity of the entire abdomen, so characteristic of this condition. There is exquisite tenderness everywhere, but more marked over the perforation. With such findings, especially if accompanied by a history that suggests the presence of an ulcer before, there is but one course to follow. Immeditae operation is imperative. Again, each hour of delay is extremely hazardous with a rapidly mounting mortality. No cases should be lost if operated upon within 12 to 24 hours after perforation. Certainly the sooner the better always. The operation itself is simple and can be done in a short time. After 24 hours the whole picture changes to one of a beginning peritonitis, from which recovery is doubtful. I have not differentiated between perforations of gastric and duodenal ulcers as the symptomatology is so similar.

Acute Cholecystitis.—This disease is almost too common and well known to deserve consideration here. However, as it can be accompanied by very severe symptoms at times, it can rightfully come under the heading of this paper.

The intensity of the symptoms varies greatly. The attack may be so mild as to lead the patient to omit calling his doctor. On the other hand it may be ushered in with the agonizing pain of stone colic. It matters not whether the patient has stones. An acute cholecystitis without stones can present just as severe symptoms. Stones are merely an incident in the disease. It is a good habit to use the term "biliary tract disease" instead of thinking in terms of stone or infection in the gall bladder itself.

The past history is important in the diagnosis. There is present always the story of past attacks of similar nature or at least of disturbances of digestion. The patient likes to diagnose his trouble as "acute indigestion". It is unfortunate that some of the medical profession also still use this term for actually there is not such a disease. It is absolutely not a clinical entity and it is well to know that the term covers a multitude of serious diagnostic errors. A history of classic gall stone colic is not necessary to make the diagnosis of acute cholecystitis. If the patient confesses to a feeling of fullness after meals, belching, and bloating, then we have enough evidence to make the diagnosis. The disease may come at any age. While it is common after 40 we see many cases below 20. The onset is usually sudden. There will be pain in the right upper quadrant followed by vomiting that may be often repeated and later be mostly bile. The pain soon radiates to the right scapular region, either straight through or around the ribs. It is continuous and not intermittent.

On examination one sees a patient not suffering acutely as a rule. There will be fever of 101° to 103°. The pulse rate is elevated, but seldom higher than 100 to 110. Its volume is normal. On palpation there is moderate to exquisite tenderness over the gall bladder region with moderate rigidity. A mass may be felt. The belly is not distended and peristalsis is usually quite normal. It is well to comment briefly on the treatment of this condition. When the diagnosis is established, morphine ad lib can be given to control pain. Absolutely nothing should be given by mouth, not even water. Certainly no drugs are indicated except morphine. Sit the patient up in bed and apply a large Prieznitz compress to the abdomen. Fluids must be supplied either by bowel or intravenously. Under this simple regime recovery from the attack

usually takes place rapidly unless empyema of the gall bladder complicates the picture in which case operation should be done after suitable preparation. Gangrene of the gall bladder is rare. When it occurs the symptoms are greatly intensified and operation is clearly necessary.

Acute Pancreatitis.—This is a relatively rare disease. It is caused by a chemical irritant (bile or duodenal contents) entering the pancreas through the pancreatic duct. Necrosis occurs, followed by a secondary reactionary inflammation. The hyper-acute type will be described. There are other less violent types, such as acute pancreatic necrosis, sub-acute pancreatitis, etc.

Hyper-acute pancreatic necrosis is a disease the symptomatology of which is so striking as never to be forgotten when one has witnessed a patient with it. This condition is a fulminating one and almost always fatal. Death may occur almost with the onset of the disease from neurogenic shock. The onset is remarkably sudden. The pain cannot be compared with that accompanying any other acute abdominal disease. Words fail to describe adequately its intensity, the agony being so severe. Its location will always be epigastric. Vomiting will follow. Almost at once the patient is plunged into shock. Cyanosis, a pinched facies, subnormal temperature, a rising pulse of very weak volume, a falling blood pressure, and collapse are symptoms noted and they appear with amazing speed. The mind will remain clear almost to the end. Peritonitis and paralytic obstruction soon complicate the picture. Death always occurs in one or two days.

In the treatment of the hyper-acute type operation must be looked upon as a last resort. The result is so uniformly poor as to make one question its advisability. However, in the acute type immediate drainage of the pancreas saves many cases. Here delay even of minutes is dangerous. All efforts as to preliminary treatment should be confined to using anti-shock measures.

Trauma to the Abdomen and Its Contents.—In these days of rapidly moving vehicles we note a steadily increasing number of accidents where injury to the abdomen has occurred alone or in conjunction with other injuries. It is very important to examine carefully the abdomen in all accident cases showing multiple injuries. Unless this is done it is very easy to overlook a ruptured viscus and center all our attention to perhaps a head injury or compound fractures, etc. It is quite embarrassing to do a good job on a broken leg only to find the next day that there is a divided intestine and it is too late to do any surgery. It is surprising how small a degree of trauma can do great harm in the belly.

Among the common types of trauma we find automobile and sled riding accidents, falls, blows by the fist, crushes (such as getting caught between an automobile and a wall), and blows by heavy objects such as a steel beam.

The traumatising force will either rupture a solid or hollow viscus or a blood vessel. There is often no external evidence of the injury as the elastic abdomen wall can give to a marked degree. The onset of the symptoms may be sudden or very slow depending on the amount of damage done. There may be severe shock, tenderness over the entire abdomen with great rigidity and severe abdominal pain. Vomiting is usual. Or perhaps many hours will elapse before the symptoms appear, especially where the damage is slight such as a small tear in the liver. In any event unless prompt surgical intervention is done peritonitis or hemorrhage will cause the patient's death. It is a wise precaution to keep all cases of abdominal trauma under observation for several days.

There is included under the heading of trauma, cases of gunshot, stab wounds, and perforating wounds from any cause. Here obviously we are dealing with a patient who must be immediately hospitalized for no one can visualize what degree of damage has been done. There are cases of course where the traumatizing agent has only penetrated the abdominal wall. One must view these with suspicion, however, until proven other-

wise. When one is certain that a viscus has been damaged immediate exploration is imperative. Again each hour of delay provides fertile soil for the dread peritonitis that will surely follow.

Rupture of the Urinary Bladder.—This condition usually follows a crushing type of trauma and often is a complication of fractures of the pelvis. Think of a ruptured bladder whenever the pelvis or lower abdomen has been crushed. Stab and bullet wounds may enter the bladder also. There are two types. The extra-peritoneal type can be described as one where the rupture takes place any place except that portion covered by peritoneum. The passing of bloody urine is evidence of this condition. When no urine is voided the catheter should be used. The symptoms include great pain and dysuria. Extravasation of urine along the fascial planes usually is noted early and of course establishes the diagnosis. The intraperitoneal type is the one where the rupture permits the urine to pass directly into the peritoneal cavity and here the symptoms are more urgent. No urine will pass per urethra, extravasation will be absent and the signs of peritoneal irritation appear early. To differentiate the two types, one can introduce into the bladder under strict aseptic technic a measured amount of sterile water. If the total amount cannot be recovered then one can be certain that they are dealing with the intra-peritoneal type. Immediate operation is imperative in either type, otherwise a fatal outcome can be expected.

Rupture of the Kidney.—This condition is looked for following trauma in the region of the loin. Shock is usually present with great pain and tenderness over the organ. Bloody urine is usually present although where the tear is in the cortex the urine may remain normal and later a large hematoma will surround the injured kidney. Again early operation is urged.

Ovarian Cyst or Tumor with Twisted Pedicle.—Twist of the pedicle of a cyst or tumor causes acute symptoms by obstructing the venous return flow of blood. We are not concerned here as to the cause. The symptoms come on suddenly and are the classic ones of peritoneal irritation. There is acute severe pain over the affected side and rigidity of the muscles. The breathing is thoracic. The patient herself may notice a sudden enlargement of the cyst. Vomiting soon occurs and the pulse and temperature rise. This condition is one of the surgical emergencies demanding immediate operation. Delay invites the inevitable peritonitis and death. Drugs or food are as distinctly contra-indicated as in all of the conditions already considered.

Tubal Abortion and Ruptured Ectopic Pregnancy.—These conditions can be considered together. A carefully elicited history is most helpful in making the diagnosis. The patient misses her period and believes herself pregnant. The usual objective and subjective signs of pregnancy are noted. Perhaps slight discomfort will be felt over the involved side. Then irregular bleeding may occur. Then the rupture of the tubal abortion occurs. Sudden lancinating pain is felt over the lower abdomen on the side involved. When the amount of blood that pours into the peritoneal cavity is large we have then all the signs of internal concealed hemorrhage, such as pallor, air hunger, a rapid thready pulse, falling blood pressure, and cold clammy extremities. If the first hemorrhage is not fatal and usually it is not, we are confronted with the signs of peritoneal irritation. Pelvic examination reveals exquisite tenderness on moving the cervix and a fluctuant collection can be felt in the cul-de-sac. Cullen's sign, when present, is a helpful diagnostic aid. It is a bluish discoloration about the umbilicus.

If the case is one of a slow leak from an impending tubal abortion, then the symptoms are less urgent and we do not see the picture of massive internal hemorrhage. In any event when the diagnosis is made, immediate operation is to be done to prevent further loss of blood or the impending rupture of a tubal abortion.

It will be apparent to you that I have not considered all of the causes of the so-called "acute abdomen." Nor have I gone into the

minute details of diagnosis and differential diagnosis. It has been my effort to bring to your attention a few facts that bear on the diagnosis and preliminary treatment of the commoner acute abdominal conditions. I have stressed the "don'ts" because of their great importance. I would again point out to you that once the diagnosis is made of "an acute abdomen" the most important thing to do is urge immediate hospitalization. The next thing is to do practically nothing. Purges, enemas, drugs, and food add insult to injury. Delay will invite diaster. Better be content to know that an acute catastrophy has occurred or is threatening than to use valuable time to establish the exact diagnosis.

I trust, in conclusion, that in reviewing the conditions taken up in this paper, I shall have stimulated your interest in a subject that of necessity concerns us all.

BACK INJURIES*

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THE title of this article may be misleading because the subject of back injuries is so extensive that it is impossible to cover it in one paper, therefore of necessity this must be limited largely to a discussion of the more serious, readily diagnosed back traumas.

Like skull fractures, back injuries are occurring in every hamlet, village and small city of this country as well as in the great medical centers where specialists are located. The automobile has become a potential carrier of serious accidents to every part of the country. Again, like skull fractures, when a serious back injury occurs, the specialist must be taken to the patient rather than the patient to the specialist. This is not always the rule but it is true in the large majority of these serious cases.

Again, so many associated injuries occur with serious back injuries that it is extremely difficult to classify these cases within the borders of any one specialty, for example, the orthopedic specialty. Skull fractures and fractured backs are frequently associated, especially fractures or dislocations in the cervical vertebræ. Within the year I have seen three cases of undiagnosed cervical fracture complicating skull fracture. The cervical vertebræ fractures were discovered anywhere from six to eighteen weeks after recovery from the skull fractures. Internal abdominal injuries, for example, rupture of the liver, tears of the mesentery, rupture of a kidney or rupture of the bladder have all been associated, in my experience, with fractured vertebræ. Fractures of the pelvis, of the femur, of both bones of the leg, of the os calcis, and other associated fractures in the extremities, are not uncommon in the presence of fractured vertebræ.

Because of these facts I am not strongly in favor of developing a group of back specialists in this country. Injuries of the back belong in the realm of the general surgeon and the general physician, especially as many of these cases are occurring in localities where the specialist is unknown. Therefore, in this paper the author will endeavor to develop a few facts concerning back injuries which will cause a general discussion resulting in a better understanding of the problem on the part of all of us.

Diagnosis:—The gross lesions of the back following trauma such as a definite compression fracture or a dislocated vertebræ are not difficult to diagnose providing proper attention is paid to the history of the injury, to the complaints of the patient, and suitable x-ray pictures are taken. Always in these conditions a thorough general examination is necessary to discover associated injuries or signs of associated disease, postural defects or

*Read before a meeting of the Tri-County Medical Society, May 25, 1932, Morgantown, W. Va.

infectious conditions which may aggravate the injury and be of great importance in the prognosis.

The less serious back traumas are far more difficult to diagnose. So many associated conditions both in the spinal and in the general systemic examination, having a potential influence, may be found that it requires the greatest ingenuity on the part of the examiner to differentiate between these and the alleged trauma.

The *history of the case* is of the greatest importance in diagnosing these back injuries. If the patient is brought into the hospital following a major accident, for example a head-on collision between two automobiles, the history develops potentialities for all kinds of major and minor injuries to the individual. Here a careful physical examination is made of the head, neck, chest, abdomen, back, pelvis and extremities, and often a catherized specimen of urine is obtained to ascertain the condition of the kidneys, bladder and urethra. The x-ray is brought in as a diagnostic aid *as soon as the condition of the patient warrants.* The injury to the vertebræ is discovered either as the sole injury or associated with a skull fracture, fractured ribs, a fractured pelvis or other injuries.

But in those disabling back conditions which fail to show definite x-ray pathology or which develop several days after the alleged injury the history assumes greater importance. How severe was the injury- When was it received? Was the injury due to a direct or indirect force? Has the patient been subject to back-ache? Have there been previous injuries to the back, their nature and when? What was the position of the patient when injured—sitting, standing, bending over or erect? Has he had recent toothache or tonsillitis or have teeth been pulled or the tonsils removed recently? Has he been subject to colds or sinus trouble? What is the condition of the bowels? Has appendicitis been diagnosed or an appendectomy performed? Has he been jaundiced? In the case of a woman, have there been any pelvic complaints? In man, any history of urinary or prostatic trouble? Has there been any marked loss or decided gain in weight recently? Has there been any foot trouble or pains in the calves of the legs or thighs? What is the exact nature of his or her work? Has there been any recent change from sedentary to heavy occupation? What have been the past illnesses? What is the family history?

These and every other possibility which might throw light upon the alleged back disability must be delved into in the history.

The complete physical examination is of equal or usually greater importance. If the case is one from a major accident the examination starts with the head and includes every part of the body that might have been injured, followed by a careful routine examination as soon as the condition of the patient permits. If the patient comes complaining of back disability from an alleged trauma the injured part is first examined followed by a painstaking complete, general examination. Each physician should develop a fixed routine for this or any other examination in order not to overlook any part.

If the patient is in bed it may be very difficult to turn him over for an examination of his back but this should be done, if at all possible, avoiding undue pain of movement or the danger of increasing his trauma. If the case is ambulatory the examination is best started with the patient sitting on a stool and later with him standing and finally in the prone position on the examining table.

Close but unobtrusive observation of the patient should be made during the taking of the history, while he is undressing and during the examination. Often data will be obtained in this way which will be invaluable in arriving at a true diagnosis.

In the case of a severe trauma to the spine, for example a compression fracture, if properly treated, one seldom encounters signs or symptoms of neurosis. On the other hand the signs and symptoms in some of these less severe back injuries are so obscure, or so difficult for the patient to express, or give such atypical complaints that there is too often a

tendency on the part of the physician to classify the case as one of traumatic neurosis. Unquestionably many back injuries, due to failure to receive relief after many changes in physicians and in the lines of treatment, or due to inherent fears of the hopelessness of a "broken back", or due to a desire for compensation for their suffering, abetted frequently by over-zealous relatives or lawyers, do develop various types of traumatic neurosis. It is sometimes extremely difficult to distinguish between the true organic and the functional condition or to evaluate either properly when there is a mixture of both in the same case.

The x-ray is necessary in the diagnosis of back injuries. It is too often neglected in cases resulting from rather minor accidents or is not resorted to until weeks or months later. The late x-ray may show osteoarthritic changes or other findings and because of the failure to take the earlier x-ray one is unable to say definitely that this or that condition was pre-existant and has no relationship to the alleged injury.

The x-ray is invaluable in the diagnosis of *alleged injury when the patient first presents himself.* If the site of the injury is not definitely localized x-ray well above and below the injured part and in many cases it is safer to x-ray the entire spine.

It is still necessary to emphasize and re-emphasize to the profession the importance of taking *both an antero-posterior and a lateral view of every spine requiring an x-ray no matter whether for an injury or a suspected disease.* Hardly a month goes by that I do not see patients with a definite vertebral injury who have been in the hands of some other physician and had an x-ray examination yet when x-rayed at our hospital the lateral views show a compression fracture. Asking for and examining the first x-ray films reveals the fact that only an antero-posterior view had been made. This failure to take the lateral view accounts for far too many failures in diagnosis and far too many cases of prolonged back disability due to inadequate treatment.

Again, if the first x-ray is negative and yet the signs and symptoms of injury persist one should always resort to a second x-ray, both views, within two to four weeks and again repeat within a few weeks thereafter if necessary. Too often the compression fracture won't show on the first films but due to movement or weight bearing the compression gradually occurs and the later film reveals the true condition. Or the 2nd, 3rd or even the 4th films, in the case of persistent trouble, will be the only means of diagnosing the traumatic arthritis or the metastatic tumor that most probably was the original cause of the back pain rather than some minor injury which was coincidental.

The following case reports illustrate these points concerning x-ray examination:

Case 1. Dr. T., age 52, attended a medical meeting. As he sat down the chair slid out from under him and as he fell forcibly to the floor the back of the chair struck him in the mid-dorsal region. He was in immediate excruciating pain and was carried to a couch in the ante-room. As soon as the essayist, a noted surgeon, was through he went to the injured doctor, examined him through his shirt, felt a swelling over his mid-dorsal spine and advised that the patient be taken to the essayist's hospital at once for most probably a sub-luxation of a dorsal vertebræ. The doctor patient was moved at once to this hospital and early the next morning an x-ray—both views —was made of his spine. An hour later the surgeon and the röentgenologist came to the patient's room, bringing the x-rays with them and told him nothing was broken or dislocated in his spine and he would be all right after a few days' rest. No further examination was made by this surgeon. The doctor suffered severely and required morphine for four or five days. He had a special nurse who rubbed his back but otherwise no treatment was given. At the end of the week the doctor called one of our best internists. He examined the patient thoroughly and also examined the x-rays. His only findings were almost complete absence of breath tones in the left chest, tenderness over the mid-dorsal vertebræ and

a spasm of the muscles on attempted deep breathing and an extremely nervous individual.

During the second week the surgeon began to plague the doctor about being a "neuro" and the latter sensed this to be the feeling of most of the hospital staff. Therefore, on the advice of the internist he left the hospital on the 15th day, going to his home. The 16th day, fearing that perhaps he was a "neuro", this doctor got up and dressed and went to his office in a taxicab. He could hardly stand the jolts on this ride and after a few hours in his office he collapsed. The pain was extreme and he could hardly breathe. He was taken home and the internist was called. Again he found a spasm of the back and chest muscles on the least effort at deep breathing. He advised the doctor to remain in bed. The internist again visited the hospital and examined the old x-rays but could find no sign of injury to the vertebræ. The doctor remained in bed for a month except, after a week, he could be helped to the toilet. By the end of the month this internist agreed with the surgeon that this was a case of neurosis. His opinion was strengthened by the fact that the doctor planned a lawsuit against the hotel where the meeting was held, holding a defective chair responsible for his injuries.

After another month the internist asked the writer to see this doctor, stating that while he was a "neuro" yet he might have some injury to his back. It took three-quarters of an hour to secure a complete history from this doctor. Examination showed a definite knuckle deformity over the 8th dorsal vertebræ. He had several variable tender vertebræ but the tenderness was always constant and marked on pressing over this 8th dorsal. The writer suggested that he be taken to St. Luke's Hospital the next morning for an x-ray and possible treatment and this program was carried out.

The x-ray examination the next day showed in both views a very marked compression fracture of the 8th dorsal vertebræ. I examined later the original x-rays and agreed that they failed to show this fracture. The doctor was rather difficult to treat but gradually recovered from his pain and discomfort under rest, heat and massage and a body corset.

This case illustrates the failure to secure a complete history or to give sufficient weight to certain facts in the history; failure to examine the patient thoroughly by the original surgeon on the case; failure to take a second x-ray when the signs and symptoms persisted, and finally failure adequately to treat the case because of failure to diagnose the condition properly. The mistake of calling him a "neuro" is the usual mistake when all these failures are present.

Case 2. Mrs. M., age 40, married, sustained a fall of little consequence in March, 1929. Approximately two weeks later she complained of pain in her lower back. A good surgeon was consulted and after obtaining this history of falling and after examining her and finding pain and tenderness near the left sacro-iliac region he had an x-ray made. This x-ray was negative. The diagnosis of sacro-iliac sprain was made and patient was treated with heat, massage and strapping. The pain persisted and finally, after five months of treatment without relief the surgeon had another x-ray examination. This film showed a marked metastatic carcinoma of the left ilium, near the sacro-iliac joint.

I saw this patient with the surgeon and helped to explain to the husband that his wife had a hopeless, incurable condition and tried to make him understand why it showed in the 2nd x-ray and not in the 1st. Of course the condition could have been discovered earlier by the principle laid down above, viz.—*if a condition persists and the 1st x-rays were negative, re-x-ray within four weeks and repeat again in a few weeks if necessary.*

Case 3. Mr. B., age 60, an engineer, fell from his engine striking with his back across a rail. He was carried to his home and the doctor was called. Examination was negative but the doctor suggested that if the patient was still in pain the next morning he would take him to the hospital for an x-ray. The next morning, however, the patient was better and no x-ray was taken then or at a

later date. This patient after a week got out of bed and limped around the house and yard but always complained of pain in his spine when he tried to get up from bed or from a chair and again when he tried to sit down. After six months he was sent to the writer for an examination, with the statement, from his doctor, that he thought the old man was making too much out of his injury and wanted to get a pension.

The history was important, namely, the fall across the rail. The patient acted perfectly natural and showed none of the earmarks of exaggerating his complaints. The examination showed a definite spasm of the muscles in the lumbar region when he attempted to rise from the sitting position. Palpation over the vertebræ showed no variable points of tenderness but always a constant point of tenderness over the 4th lumbar vertebræ. The x-ray examination confirmed our diagnosis of compression fracture of the 4th lumbar. This fracture, however, did not show upon the antero-posterior view and without the lateral view would have been missed.

The failure to take an x-ray here resulted in this doctor missing his diagnosis and later calling the patient a "neuro" or exaggerator.

Differential Diagnosis:—One must be alert to discover diseasesd conditions of the spine which simulate, in their early stages at least, the traumatic back.

Traumatic Lumbago—Myofascitis:—The differential diagnosis between the traumatic back and certain diseasesd conditions is not always easy but is of prime importance both in prescribing treatment and in those cases of a medico-legal trend where the honest decision of the surgeon is necessary in deciding between liability and non-liability, compensation and non-compensation.

In the case of a slight injury followed by a painful low back the question of deciding whether this is a "rheumatic lumbago" or a "traumatic lumbago" is very difficult. Muscular rheumatism or a myofascitis very frequently attacks the erector spinæ muscles. If the patient states that he was lifting when the attack suddenly started, or if he was carrying a heavy desk with a fellow employee and the latter dropped his end of the desk throwing all the weight of the desk upon the patient or that he slipped upon some grease while walking through the factory; and if there were witnesses to this slight accident, and finally if the examination reveals a definitely lame back, then it is practically impossible to disprove the injury element. Even if there is a past history of lumbago and the findings are definitely those of lumbago the slight accident can be held to be an aggravation of an existing condition. But if the patient gets a sudden attack of lumbago when arising from bed or upon turning over in bed, or following a Saturday afternoon of helping his wife clean house then the question of accident seldom arises and the case is clearly one of "rheumatic lumbago." As a rule both conditions are exactly the same. In these indefinite back conditions the question of injury would not be raised so often if there was not an accident insurance policy or an employer's liability law involved.

Posture—Body Mechanics—Flat Foot:—In all cases of back injury, or backache, especially in the low back pain the surgeon must search for faulty posture, poor bodily mechanics and such defects as flat foot. A third degree flat foot is very frequently the active etiological factor in the alleged truamatic back—the slight injury being only the exciting or contributing cause. Months of prolonged treatment in such cases may be avoided by discovering and stressing the treatment of the flat foot condition.

Tuberculous Spondylitis may be the cause of the pain and disability for which some trivial injury is held responsible. The appearance of a psoas abscess may be the first indication which the patient develops to show the true condition.

Kummell's Disease or the development of a traumatic spondylitis months after the injury must be differentiated from the tuberculous spondylitis and from the osteoporotic type of arthritis.

In those regions still subjected to typhoid epidemics the "*Typhoid Spine*" must likewise be considered in a differential diagnosis.

Metastatic Malignancy has already been mentioned. The spine is a very frequent site for these metastatic malignancies. Early the x-ray may be negative but one must persist in their x-ray studies of the spine whenever the possibility of this condition is known to exist or can be suspected.

Case 4. M. T., 63 years old, slipped on the ice while working for the village of R—. He completed his day's work but the next day had pain in his back and therefore went to the village's physician. An x-ray was taken but was negative. His back was strapped. Pain persisted but he was able to work on and off for a few weeks and then was forced to quit. He was referred to the writer about two months following this alleged accident for examination and opinion as to whether it was a traumatic back and suggestions as to treatment.

Examination showed an old man who was definitely suffering pain. The back examination was negative except for some limitation of motion, that could easily be due to osteoarthritis, and for a definite, constant point of tenderness in region of 4th lumbar vertebræ. The rectal examination revealed an enlarged, indurated prostate that was undoubtedly malignant.

X-ray examination showed a destructive process in the body of the 4th lumbar vertebræ.

Diagnosis was readily made of primary carcinoma of the prostate with a secondary growth in the vertebræ.

The complete physical examination, including the rectal examination, combined with the later follow up x-ray examination, made it possible to differentiate this from an accidental or traumatic condition. It likewise saved the village of R— a considerable sum of money when suit was brought to collect damages for the alleged accident.

I have mentioned the importance of unobtrusively observing a patient carefully during the examination. Occasionally a patient will complain of stiffness in the back and during the examination shows definite limitation of flexion movement. When the examination is completed see that the patient's clothes are lying on the floor. Tell him to dress and then apparently leave the examining room or otherwise pay no attention to the patient. Occasionally such a patient will lean over and pick up his clothes showing that now that the examination is over his back is not nearly so stiff as during the examination.

One of my favorite ways of disproving an alleged stiffness in the back is the following: A glove is slipped on and patient is told that you want to make a rectal examination. Patient is placed in front of a low table or chair; finger is inserted in the rectum and of course it is painful; patient is told to lean over the table or chair and it won't be so painful and the examination is kept up until the patient has flexed his back equal to any normal flexion. These and many other methods can be adopted to prove the neurosis or malingering cases.

Diagnosis has been considered at length before taking up the problems of treatment because of the surprisingly great number of these back injuries receiving various lines of treatment without any definite diagnosis of the real condiiton having been made. I have seen many cases who should have been in bed at absolute rest, going daily to a doctor's office for physical therapy treatment, namely, quartz light treatment, or more often diathermy or in some instances baking and massage. Some of these patients have had compression fractures undiagnosed. Other cases with trivial injuries kept in bed for weeks, or fitted with a Taylor belt or given physical therapy treatments, usually light or diathermy, have developed true neurosis due chiefly to over-treatment. Therefore one cannot write concerning the traumatic back without emphasizing the importance of diagnosis. The two must go hand in hand.

Anatomy:—Time will not permit an exhaustive review of the surgical anatomy of the spine. It is obvious, however, in observing the treatment of back injuries in the hands of many of us, that too little attention is given to the strucure and anatomy of the back. The x-ray shows the fracture, the

patient is put at absolute rest in bed, or in a cast or in a complicated back brace for weeks or months until the fracture in the bony part is healed. But little thought is given to the damage in the adjacent joints of the back by this prolonged immobilization.

Every segment of the back is surrounded by numerous joints with their capsules, synoviæ ligaments and often bursæ. Outside of these joints and their component parts are found tendons, muscles and aponeurosis or fascia. It is of far more importance to consider the damage done to these joints and the surrounding soft tissues either the result of the injury or the result of prolonged immobilization than it is to give too great consideration to the treatment of the fracture.

Practically every surgeon has learned the importance of protecting the adjacent joints in injuries of the extremity if full function is to be restored. Fractures in the humerus and injuries about the shoulder joint offer the best example of protecting the joint for future functional restoration. The injury in or about the shoulder joint is treated with the arm in abducted, elevated position, either in a plaster airplane splint or some modification of the airplane splint. Massage of the muscles in and about the shoulder joint and early active movement of this joint, always with the arm in the abduction position are necessary if prolonged immobilization is indicated. We have learned the axiom that it is much easier to get the arm down to the side of the body than it is to elevate it from the side of the body whenever prolonged immobilization, especially in an adult, is necessary. Again, in Colles' fractures we have learned the lesson of early message and active movement of the wrist joint if full functional restoration is to be secured.

It is of equal, if not greater, importance to remember the numerous joints of the back and to protect their function by early massage and a certain amount of active motion in all cases of severe injury of the back.

In skull fractures we have learned that the fracture in the bony skull is of far less importance than is the damage within this bony shell—viz.—to the brain and its coverings. In fractures of the back, instead of thinking of the damage to the bony parts, I want you to think of the associated injuries in and about the neural canal. In order that I may better visualize my fractured vertebræ cases I keep in mind at all times the following short outline:

I. Fractured Vertebræ.

A. Damage Within the Neural Canal—To the Cord and Its Membranes.

1. Is it compressed or lacerated?
2. Is it simply a hemorrhage into the cord?
3. Is it a simple contusion with edema?
4. Can it be relieved by operation?
5. Is operation advisable?

B. Damage Without The Neural Canal.

1. Hemorrhage or soft tissue injury about nerve roots.
2. Evulsion of the nerve roots as in brachial plexus injuries.
3. Injuries to the joints of the vertebræ.
4. Injuries to the capsule and ligaments.
5. Injuries to the muscles and fascia.

C. Damage To The Bony Spine.

1. Is there a compression fracture of the vertebræ?
2. Is there a fracture through one or both laminæ (often overlooked and frequently a cause of prolonged disability).
3. Is there a fracture to the transverse processes?
4. Is there a fracture to the spinous processes?
5. Is there a partial or complete dislocation or rotation of the vertebræ?

From this outline you will note that, in my judgment, the injuries within and about the fractured vertebræ are of more importance than the fracture itself. The resulting disability from the majority of compression fractures of the vertebræ is due to permanent changes in the soft tissues about the joints of the vertebræ, far more often than to the fracture itself.

Treatment:—The treatment of fractures

of the vertebræ can be divided into operative and closed methods and the after care. Formerly, operative treatment was used chiefly in those cases with cord injury. Of recent years there has been a growing tendency to operate compression fractures without cord injury. The operations of choice were either an Albee autogenous bone graft or the Hibbs operation whereby the spinous processes were chiseled loose and turned down forming the graft. The purpose of the operation is to cause a bony ankylosis between the fractured vertebræ and the adjacent vertebræ, above and below.

The treatment of skull fractures has gone through its era of operative interference, viz. —the sub-temporal decompression. In a review of 20,000 cases of skull fractures in the literature, from 1900 to 1928, I found that the operative treatment increased from 12% in the first decade to 24.5% in the second decade, to 16% in the first seven years of the third decade, and since then has dropped to approximately 10%. In watching this growing tendency for operative interference in back injuries, without cord compression, I believe we are going through the same experience. A decade ago, few simple compression fractures of the spine were operated. Within the last few years many of our best surgeons are advocating the operative treatment of compression fractures. Within the last year or two there is a strong sentiment developing against this operative procedure. I grant that in a few cases it may be indicated, but in the great majority of cases, the more conservative method of closed non-operative treatment, especially in the hands of the rank and file of the profession, who are seeing most of these fractured backs, will give far better results. A great orthopedic surgeon recently said to me that he was thoroughly convinced of the value of bone grafting the compression fracture. He added, however, that there were entirely too many "bone graft crimes" being committed because only a few men in the country really understood the Albee or Hibbs operation. Since these few men capable of doing this operation are seeing or will see only a very small percentage of the back fractures of the country I contend that it is our duty to teach the rank and file of the profession the best and most conservative means for treating these cases without running the risk of adding to the number of "bone graft crimes."

In the case of definite cord compression or laceration of the cord with immediate paralysis, usually of the bladder, rectum and lower extremities, the question of whether or not to operate becomes paramount. Too frequently the operation is postponed to see if the patient will get over his paralysis. If the paralysis develops immediately it is prima facie evidence of definite injury of the cord. Neither the x-ray, lumbar puncture, nor any other method thus far known, will tell to what extent that cord is injured or whether or not it could be relieved by laminectomy. The longer the compression of the cord persists, the greater the damage to the cord. Therefore, I am strongly in favor of an immediate laminectomy in such cases. If a cord has been completely severed or so far damaged, that a laminectomy will do no good, at least no harm is done to the patient by this procedure. On the other hand, by the earliest possible relief of the compression of the cord, when it is not damaged beyond repair, the patient is given a chance for partial or complete recovery.

If, however, the paralysis of the extremities is not immediate, but develops within a few hours or a day or two after the injury and if there has been no manipulation or undue chance of further damage to the cord by the fracture itself, then it is almost paramount evidence that one is dealing with a hemorrhage in or about the cord or to a contusion with an edema gradually developing. In either of these cases recovery usually occurs without a laminectomy.

In the presence of paralysis of the extremities, whether a laminectomy has been performed or not, it is of the greatest importance to protect the joints and soft tissues of the extremities from developing faulty deforming positions which will prevent function when recovery takes place. Thus, the feet must

be protected from the foot-drop, or the hand from the wrist-drop. Gentle but daily and gradually increasing massage must be given to the extremities and every other method which will prevent marked atrophy and complete loss of muscle tone must be adopted. Muscle training exercises and joint re-education should start early in every paralyzed case, looking forward to the day when the patient may be able to use the extremities once more. I have seen too many cases of excellent laminectomies with recovery of the motor power in the extremities but with such marked deformities within the joints, especially foot-drop, that the patient is unable to walk.

Fractures of the Spine Without Cord Lesions can be divided into:

(a) Compression fractures of the body;
(b) Fractures of the transverse processes;
(c) Fractures of the laminæ and arches;
(d) Fractures of the spinous processes.

Compression fracture of one vertebral body is the commonest type. It may be accompanied by similar fractures in other vertebræ or by associated fractures, as, fractures of one or more transverse processes. The usual mechanism is a forcible flexion of the spine, causing a crushing of the anterior portion of the body. At times there is a forward displacement of a small wedge of the body of the vertebræ.

The immediate surgical treatment of this condition varies from absolute recumbence in bed to operative fixation by bone transplant across the site of fracture. In between these two extremes many methods of repair are recommended.

The principles of treatment governing these compression fractures are:

(a) Correction of the deformity by hyperextension of the spine.

(b) Immobilization by recumbency on a bed with some device to maintain the hyperextension; in a body cast with recumbency in bed; rest in bed and traction; a body cast that allows patient to be ambulatory, or a specially built back brace.

(c) Immobilization and rest for a variable period, ranging from eight weeks to six months.

Walsh, of Pittsburgh, has long advocated the hyperextension treatment of these vertebral fractures and has developed a special bed which can be raised in the middle, thus giving a position of hyperextension to the recumbent patient. Davis, of Erie, describes a method which consists of a sling about the feet with a rope passing from the sling through a pulley in the ceiling; the anesthesized patient is lying face downward and as his feet and legs are raised in the air his weight rests upon the upper chest. Manipulations of the spine are made with patient in this hyperextended position. A plaster bed is then applied directly to the patient while still in this position. Later this cast can be bisected and the back half removed for massage. R. Watson Jones, of Liverpool, describes a simple method whereby two tables are arranged end to end with a space between slightly greater than the length of the patient's trunk. The front table is raised on blocks on chairs, approximately two feet higher than the other table. The patient is then placed with his head and arms resting on the higher table and the front of his thighs on the lower table. This produces a marked hyperextension of the back by the sagging of the trunk between the tables. The cast is then applied from the neck and axilla down to and including the upper portion of the pelvis. After approximately one week in bed Jones allows his patients to walk about, thus securing a certain amount of back exercise by the mere function of walking. He has them wear this cast for approximately sixteen weeks. Most of his cases are back at work at the end of six months.

During the last four years my treatment of these compression fractures of the spine has been undergoing a definite evolution. It started from my effort to prove that operative treatment—viz. bony ankylosis, across the site of the compression fracture was not necessary; that such a fixation was not the ideal toward which the ideal of treatment was aimed and that simpler, common-sense methods aimed at maintaining function in the back joints, should

give quicker and more functional results than we have been obtaining in the past. Thus, various methods have been used and have largely been discarded—for example:

Rest in bed with traction to the head and lower extremities, or traction and counter-traction by elevating one end of the bed, has been employed. A Bradford frame was used or a firm pillow placed under the back at the point of the fracture to secure hyperextension. The patient was kept in traction or on the frame for approximately two months, followed by one month of Physical Therapy while still in bed, followed by gradual exercise with a view of returning him to work at the end of six months.

The traction method was then dropped and rest in bed with hyperextension only instituted. Rest in bed with earlier Physical Therapy methods was persisted in for eight weeks, followed by approximately eight weeks of exercise and gradual redeveloping of back joints and muscles, with a view of returning the patient to work at the end of four months.

During the last two years my treatment of these compression fractures has consisted of the following steps:

The patient is placed upon a Bradford frame the first day he is admitted to the hospital. I am employing an adjustable Bradford frame so that the amount of hyperextension can be increased daily until the desired amount is obtained. An ordinary Bradford frame can be employed. It is bent in the region of the fracture so as to give a marked convexity to the firm canvas bed spread across the frame, thereby providing the desired hyperextension. The frame can be made with a removable strip of canvas at the buttocks to facilitate the use of the bed pan.

At first the patient can be firmly attached to the Bradford frame by wide flannel binders. The patient soon lies low on the frame perfectly relaxed when it is turned from side to side. Thus, by turning the frame from side to side, the position of the patient can be changed while maintaining his hyperextension, thus preventing the feared pulmonary complications.

After approximately one week the patient is turned on the frame, completely over to lie upon the mattress or upon a cart placed at the side of the bed. The mattress or cart has sufficient pillows to raise the upper portion of the chest at least two feet, thereby maintaining the hyperextension. The Bradford frame is now lifted from the patient's back and heat and massage applied to the entire musculature of the back. Following this the patient is taught exercises, such as pushing his chest backward by supporting himself upon his arms, thereby even increasing the amount of hyperextension. After a due time of massage and exercise the Bradford frame is again placed upon the patient's back and he is gently turned back upon the bed, again reclining upon the Bradford frame. This procedure is repeated daily with increasing amounts of hyperextension exercise and of strength of the massage. Each time, following the procedure, the frame is reapplied and the patient turned back into a recumbent position.

The aim of this procedure is to immobilize the joints of the back during the period of hyperextension treatment of the compressed fractured vertebræ. It is based upon the same principles that prevail in the treatment of joints near fractures in the long bones. In both instances, massage and exercise are indispensable in maintaining function in the joints during the period of healing of the fracture.

At the end of three weeks of the above treatment a cast is applied to the back after the method of Jones. More recently I have been placing these cases on their hands and knees on a table allowing the back to sag as far as possible, thus giving an ideal hyperextension position. With the patient maintaining this position the cast is applied. It is important to apply the cast on the anterior surface of the bed almost as high as the clavicles, and as low as the pubis. After the cast is dried a large circle is cut out of the back of the cast, in order to allow massage of the muscles. The patient is allowed to walk anywhere from the third to the fourth week. The cast is re-

moved at the end of eight weeks. Massage and exercise is continued for another two weeks.

I now have six cases who have returned to regular employment by the end of twelve weeks. In not a single instance has a body brace been applied to these patients.

All fractured vertebræ do not fall into the class of cases just described. Some of them seem to recover completely without any treatment, while others continue to have symptoms in spite of the most careful handling. The surgeon must use his judgment in the handling of each individual, and will find that many will respond even more rapidly to the treatment. Again, considerable weight must be given to the forms of treatment now being advocated by many, which allows earlier ambulatory care.

Fractures in the cervical region usually need immobilization for a period of six or eight weeks. This can be accomplished by rest in bed with a jury-mast traction apparatus, by cast or by specially made neck braces with head support. A combination of traction with neck brace is most often used. Frequently these braces or a cast are worn for six months or a year which is absolutely unnecessary.

It is my opinion that gentle, but gradually increasing in force, massage should start within the first week while the case is still in bed and in traction. The massage should include the neck, shoulder and arm muscles. I am opposed to a cast as it prevents this massage and later exercise. A brace can be removed and massage given. Such a patient should be placed in bed or on a table, immobilization maintained by sand bags placed on either side of the head during the treatment and then the brace replaced. This should be given every day or at least every other day. After four weeks very slight active exercise as gently turning the head from side to side, and assisted active exercise as helping patient to lift his head slightly from the table, should be instituted. After 8 weeks, providing the x-ray shows no contra-indication, the brace can be removed for longer periods each day and the amount of exercise and massage increased rapidly. By the end of ten to twelve weeks most of the average cases of fracture of cervical vertebræ without cord symptoms should be free of all immobilization, all braces and should have full function in the neck.

I have seen cases of cervical fracture still wearing a brace with stiff neck due to ligament and muscle contraction, who have been told that they must wear the brace for at least a year. Unquestionably, more attention paid to maintaining function in the soft tissues of the neck and more faith in the ability of these fractured vertebræ to heal would obviate the necessity, often born of fear of disaster, of wearing these casts or braces for even six months, let alone a year.

Throughout this paper I have frequently referred to such physical therapy procedures as massage, active exercise, muscle training exercises, etc. Not only in back injuries but in all fracture cases, physical therapy is one of the most important adjuncts to the surgical treatment. If full functional restoration is to be secured the surgeon cannot afford to ignore physical therapy. Too often the surgeon thinks he is giving physical therapy when he uses a "light" or resorts only to diathermy.

To treat back injuries successfully one must remember — *The Spine is Made up of Numerous Joints With the Two Large Sacro-Iliac Joints Adjacent to It. Immobilize These Joints for any Length of Time and Stiffness is Bound to Follow. Massage and Exercise are the Two Best Means of Combating Ankylosis Here as Well as in Other Joints.*

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VOICE DYNAMICS

So neglected is the field of voice dynamics by the ear, nose and throat specialist that the play has been taken entirely out of the hands of the specialist, and numerous teachers have come into existence with all kinds of fantastic theories which do not comport to the laws of physiology or physics, according to Dr. Leon Felderman who writes about the "Production of the Human Voice" in *Hygeia* for August.

THE FORGOTTEN MAN

PRESIDENT'S PAGE

During the past few years many countries have passed through remarkable periods of financial inflation and deflation. In some instances inflation has been restricted to an increase in commodity prices; in others to an expansion of credits; and in others (notably Germany) there has been an actual currency inflation. There is normally a continuous rise and fall in the commodity value of money. Usually these changes take place gradually and adjustments are accomplished without much hardship. However, the movement is so violent at times, for instance in the Fall of 1929, as to cause a great deal of inconvenience and suffering.

Ordinarily wages and prices fluctuate together. If they maintain a reasonably constant ratio to each other, periods of inflation bring no hardship to the laborer. However, there is a large group of workers, to which the physician belongs, whose incomes do not tend to expand in proportion to the rise of commodity prices. It is an embarrassing and difficult task for a physician to increase his schedule of fees even when the ordinary costs of living have increased to the point that it is impossible for him to pay his bills. At the time when Germany had inflated her currency to the point where it took a trillion paper marks to buy a gold mark, the country doctor was charging his patients on the same old scale. His fee for a house call would not buy a loaf of bread for his family.

Our President, through the National Industrial Recovery Act, attempts to accomplish an inflation of commodities and wages. If this measure, along with others, less radical, does not bring prosperity, he is empowered to inflate the currency. All these things mean a higher price level and a higher cost of living.

During the years of the depression the doctor's pocketbook has grown thin. His collections have been poorer than usual. He has been called upon for an unprecedented amount of charity work. He has cut down his usual fees, either by request or voluntarily. In the face of rising prices, he is in a very uncomfortable position and should take steps to protect himself.

The individual physician cannot accomplish very much independently. The County Medical Societies should have frequent meetings for the discussion of economic problems. Fee schedules should be reviewed and revised if necessary. A strong effort should be made to secure the complete coöperation of all members. The National Government endorses collective bargaining for laborers, and manufacturing codes for industry. Common sense endorses coöperative regulation of the physician's fee schedule. N. I. R. A. provides minimum wages and maximum hours for labor, and sanctions a reasonable profit for capital. The professional man does not come within the purview of the act. "The forgotten man" will have to take care of himself!

D. A. MacGregor
President.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

The annual meeting of the National Tuberculosis Association, held jointly with the Canadian Tuberculosis Association at Toronto, June 28-30, drew together a large representation from both countries, as well as two distinguished visitors from England. Dr. Esmond R. Long, of Henry Phipps Institute, reports in this number brief abstracts of the papers and symposiums of the Pathological section.

WHAT IS NEW IN TUBERCULOSIS PATHOLOGY

Sir Humphry Rolleston, who reviewed the subject of non-pulmonary tuberculosis, dwelt especially on chronic hyperplastic tuberculosis of the intestines and the accompanying hyperplastic peritonitis. He made the interesting suggestion, proposed by preceding investigators, that these unusual forms of tuberculosis, in which tubercle bacilli are difficult to find, might be due to different phases of the several stages of the life cycle of the bacillus of tuberculosis, recently described by several investigators.

Drs. Petroff and Winn of Trudeau, New York, reported further developments in their study of colony variation in the growth of avian tubercle bacilli. From a single strain of this bacillus they separated out four types, the extremes of which formed "smooth" and "rough" colonies on culture media and were respectively virulent and avirulent for chickens.

A paper presented by Dr. Daines of Salt Lake City may explain some of the positive tuberculin reactions reported from time to time leading to slaughter of cattle subsequently proved not to be tuberculous. He described acid-fast bacteria, apparently not tubercle bacilli, obtained from certain skin lesions of cattle reacting positively to tuberculin, but not tuberculous, as shown by post-mortem examination. The bacteria, which appeared to be a previously undescribed variety, and the skin lesions they caused, evidently induced a sensitization to tuberculin.

A complicated life cycle of the tubercle bacillus, in which several granular phases occur, was reported by Dr. Kahn of Cornell University. He embedded single colonies of tubercle bacilli growing on solid culture media and sectioned them. Stained by the usual methods for tubercle bacilli, sections showed zones of acid-fast, partially acid-fast and non-acid-fast bacteria, conforming closely to the types previously described by Dr. Kahn in his cultures from single organisms.

At a later meeting Dr. Wyckoff of the Rockefeller Institute, New York, also presented a paper on the growth of tubercle bacilli, which was apparently not in agreement with Dr. Kahn's work. Dr. Wyckoff used the ingenious method of motion photography of the growing bacteria on clear solid media. Several kinds of tubercle bacilli, chiefly derived from tuberculosis of cold blooded animals, reproduced by the simplest of all methods, elongation and fission into two new organisms like the original.

Another paper, presented by Drs. Soper, Alpert and Adams, dealt with the relative immunizing properties of a "smooth" type variant of bovine tubercle bacilli, killed by heat, the well known living attenuated BCG strain of bovine bacilli, and living human type bacilli. The heat-killed bacilli caused the greatest protection. Dr. Willis of Detroit described a surprising frequency of tubercle bacilli in the urine, as well as sputum, of children with childhood type tuberculosis.

The second symposium was devoted to silicosis. (A forthcoming number of ABSTRACTS will be devoted to this subject).

Progress in Research.—A third symposium was given to reports from investigators working under grant from the National Tuberculosis Association. Dr. Richardson of Cornell University reported experiments by himself and colleagues on the respiration of tubercle and related bacilli. The most significant fact was the high sensitivity of the pathogenic acid-fast bacteria to deprivation of oxygen, a characteristic probably playing a role in the limitation of their growth in the animal body.

Several papers dealt with the proteins of tubercle and related acid-fast bacilli. It was brought out clearly by several investigators that the pure proteins of these bacteria are capable of sensitizing the animal body so that subsequent injections of the same material into the skin elicit an inflammatory response much like that caused by tuberculin in the tuberculous animal. Dr. Aronson of the Phipps Institute, reported that while the protein MA100 almost exactly paralleled Old Tuberculin as skin-testing material, it possessed the capacity, on repeated injections in children, of sensitizing the skin so that false positive reactions were given with later higher dosages. *(Continued on page xxiv)*

THE WEST VIRGINIA MEDICAL JOURNAL

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PUBLIC HEALTH APPROPRIATIONS

A few years ago the standard by which state health commissioners were measured was based largely upon the amount of money they were able to secure from their respective legislatures. Those commissioners who managed to secure large appropriations were able to branch out in many new and untried fields. There were therefore the so-called "pioneers" of public health work. On the other hand those commissioners whose budgets were cut to the bone had to take a back seat and listen to the reports of their more fortunate brothers.

We are beginning to feel that a new era has been reached in the public health field and that in the not too distant future our health commissioners and health officers will be rated highest who can show the best results on the least amount of money. We believe that the heyday of the money-spender is past. Lavish appropriations for public health work have already been curtailed in most states and we hope that we will soon see the various departments of public health confined to the original activities for which they were created.

Not long ago we heard of a health commissioner of another state who appeared before the budget committee of his state legislature and made this statement, "Gentlemen, if you reduce our appropriation for public health work you will set our department back 20 years."

To which a physician member of the committee slyly replied, "Anything that will set public health work back 20 years is bound to be a good thing so by all means let us cut the appropriation."

Perhaps this was "rubbing it in" a bit too hard, but there is no question that many of the present day health activities were brought about more through the tendency to spend public money than through necessity. It is also apparent that in many ways the health work of 20 years ago was more concentrated, more efficient and more to the point than it is today.

It all comes right down to the point of how far we should go in public health matters. In the past this has depended largely upon how much the public would stand for. Now that a definite reaction has set in, we expect to see a considerable curtailment of public health activities. In the main, we believe that such a curtailment will be a good thing. Certainly a health department that concentrates on health education and sanitation should do the job much better than a health department with a dozen or more irons in the fire.

We are not advocating the elimination of any of the present functions of our own state health department. While we believe that some of these functions are rather far afield, we still feel that West Virginia is much more fortunate in regard to public health work than many of her sister states. Steps have already been taken to stop some of the inroads on the private practice of medicine. Here in West Virginia it looks like we are going to have a period of concentration rather than of expansion. Our public health problems in this state have never reached the dilemma stage at any time and now they seem to be in a fair way of being reduced to a minimum. We are glad to say that our "flaw-picking" in the early paragraphs of this editorial is not aimed at local conditions. We have a high regard for the personnel of our state health department and we believe that now is the time to give that department a helping hand.

HOSPITAL EXTRAVAGANCE

Several years ago we visited the formal opening of a new hospital in Southern West Virginia. Everyone present viewed the new structure, both inside and out, in amazement.

"This," they said, "is the finest hospital in the state."

Two years later another new hospital was opened and dedicated to suffering humanity. It was even more wonderful than the first.

"Here at last," said the visitors, "is the finest of all."

Last year we attended a third hospital opening. The tiled walls, the modernistic furniture, the expensive lighting fixtures all went together to eclipse anything that had yet been seen in hospital construction in West Virginia. The visitors were astonished to find such a marvelous institution within the borders of our state. Here again was heard the oft-repeated remark, "This hospital has topped them all. Nothing is left to be desired."

Let us stop for one minute and consider who pays the bills for these elaborate institutions. The doctor or doctors who erect them? Not at all! The patients who enter these hospitals are the ones who pay the bills. Although such patients are almost invariably in financial as well as physical distress, they are the ones who chip in and "pay the freight" for elaborate and extravagant hospital construction.

Hospitals claim they can't make any money. Patients claim they can't pay for hospital service. In the face of this we still see hospital construction paying its annual toll to the false gods of rivalry and conceit.

If the depression accomplishes nothing else, we hope it will at least curb the desire of hospital owners and superintendents to outshine their neighbors in hospital construction. If the depression brings about an era of common "horse" sense in this particular field, we feel that it will have accomplished at least one useful purpose. We have always felt that a patient could suffer quite comfortably in a clean bed, regardless of whether the bed rested on yellow pine flooring or mosaic tile.

We have always liked the comment of H. L. Mencken in his American Mercury editorial on the report of the Committee on the Costs of Medical Care. Speaking of the vast increase in the cost of medical care, Mr. Mencken stated that he did not believe that the doctors had profited to any considerable extent by this increase. "Nor has most of the excess gone to the specialists," he wrote, "It has gone to the hospitals, and they have got it, not in the character of institutions for the care and cure of the sick, but in the character of luxurious hotels for the entertainment and flattery of the sick."

ANNUAL HOSPITAL MEETING

Plans for the annual meeting of the Hospital Association of West Virginia, which will be held at Clarksburg on October 3, are rapidly getting under way and the program is expected to be announced in the near future. A meeting of the program committee was held in Huntington on August 10 and the general topics for discussion were assigned.

It is understood that the Clarksburg meeting, which will take place at the Stonewall Jackson Hotel, will be honored by a visit from Dr. N. W. Faxon of Rochester, New York, President of the American Hospital Association. Dr. Faxon will take part in the afternoon session and will be one of the principal speakers at the convention banquet.

Among the topics that will be discussed at the coming meeting are those pertaining to group hospital insurance plans, hospital participation in the National Recovery Act, the effect of the new gross sales tax on West Virginia hospitals, and workmans compensation.

Following the banquet at Clarksburg, a convention dance will be sponsored by the Hospital Association for all those in attendance.

THE HOSPITAL AND THE NRA

In answer to many hospital inquiries, we wish to announce that the professional employees such as physicians, internes, nurses, students in training, dietitians and technicians are exempt from the terms of President

Roosevelt's agreement under the National Recovery Act. This information was contained in a telegram sent by General Hugh S. Johnson, Administrator of the Act, to the American Hospital Association on August 2.

In view of this assurance, the American Hospital Association has advised all hospitals to sign the President's reemployment agreement and to work under the agreement until such time as a readjustment can be worked out. During the past month a committee representing the American, Catholic and Protestant hospital associations met with the National Recovery Administration in Washington and urged that all voluntary hospitals be exempted from the provisions of the NRA to the same degree and in the same manner that tax supported hospitals are exempted.

The full text of General Johnson's message, which throws considerable light on the subject of hospital participation in the President's program, is published herewith:

"Administration expects hospitals to comply with terms of President's agreement. Orderlies, maids, waitresses, scrubwomen, sub-janitors and yardmen classified under paragraph two, President's reemployment agreement. Professional employees, physicians, internes, nurses, students in training, dietitians and technicians are exempt from terms of President's agrement. Administration urges speedy submission of permanent code for hospitals which may provide for conditions peculiar to hospital employees. Stay of provisions of President's reemployment agreement may be applied for so that agreement may be adopted pending approval of code."

PULLING TOGETHER

Throughout the three and one-half years of the depression the JOURNAL managed to keep its head above water and now, with conditions rapidly improving, we find ourselves much better off than we were before the crash. During this period the financial welfare of the JOURNAL was maintained entirely through the advertising pages. We feel that the record of the JOURNAL is something to be proud of.

In view of the above, we want to proposition the doctors who read these pages. This JOURNAL belongs to you. You and your confreres contribute the material that goes into it and you select the editorial board which runs it. The JOURNAL is the official organ of your Association and you make up that Association. Now, we want you to develop a wholesome interest in these advertisers who make your JOURNAL possible.

We do not want you to blindly follow the JOURNAL advertising pages in purchasing equipment and drugs or in selecting a home or institution for some nervous or mental patient. What we do want is for you to consult the JOURNAL advertising pages frequently and regularly and, when other considerations are equal, to give preference to the advertisers who support our publication. This, we feel, is a very modest request. Yet if only one-half of the members of the Association would follow this suggestion we would soon have an overflow of advertising copy.

After all, this is a pretty fair and square proposition. If certain pharmaceutical and supply houses and sanitaria support us, we ought to support them. Unquestionably a goodly number of doctors are supporting our advertisers or we would never have been able to make such a splendid showing during the lean years of the depression. We hope this support will be continued and enlarged. We will continue to preach this gospel of advertising support until all of our members are familiar with the doctrine that we should patronize the friends who patronize us. Let's get behind this idea and put it across.

DR. WILLIAM F. WALKER

Dr. William F. Walker, 58 years of age, of Elkview, died in a Charleston hospital on July 26, following a short illness. He had practiced at Elkview for more than 25 years and was widely known throughout Kanawha County. He was graduated from the University of Louisville in 1907.

Dr. Walker was unmarried. He is survived by five brothers, including Dr. R. H. Walker of Charleston, and two sisters. He was held in the highest esteem by his fellow practitioners and his death removes another member of the old school of "family doctors."

COUNTY SOCIETY NEWS

MONONGALIA COUNTY

Dr. S. J. Goodman of Columbus, Ohio, was the scientific essayist at the August 1 meeting of the Monongalia County Medical Society which was held at the Hotel Morgan, Morgantown. His subject was "Treatment of Post-partum Hemorrhage and Progress of Obstetrics," which was generally discussed by the members present.

Preceding the scientific session, a chicken dinner was served to those in attendance.

G. R. MAXWELL, *Secretary.*

FAYETTE COUNTY

The Fayette County Medical Society held its regular monthly meeting at the Hotel Hill, Oak Hill, on the evening of August 8 with a good attendance. It was voted at this meeting to secure the speaker for the September meeting from Richmond and to invite the Kanawha and Raleigh County Medical Societies to attend.

Under the head of new business, Dr. Duke Arthur Dent of McKendree was received as a new member of the Society.

The scientific program was opened by Dr. E. S. Hamilton who displayed an interesting case of Squamous Eczema and gave a brief history of this condition together with treatment.

Dr. G. H. Barksdale, Charleston, was the visiting essayist and gave a splendid paper on "Myocardial Degeneration" which was ably presented and generally discussed by the members present.

A very timely and complete paper was read by Dr. Hamilton of Oak Hill on present day economics and finance in general and more especially pertaining to the medical profession. His subject was "Chasing the Beefsteak Under the New Deal."

In addition to the essayist, Dr. Barksdale, the guests included Dr. H. A. Bailey of Charleston.

RALPH HOGSHEAD, *Secretary.*

MONONGALIA—PRESTON

A joint meeting of the Monongalia-Preston County Medical Societies was held in Cornwell Cottage at Hopemont on Tuesday, July 18, at seven o'clock.

In the absence of Dr. Miller, President of the Preston County Medical Society, Dr. C. C. Romine, President of the Monongalia County Medical Society presided. Dr. Evans welcomed us to Hopemont. Dr. D. A. MacGregor, President of the State Medical Association, gave us greetings from the State Association. This was followed by a short talk by Dr. Roy Ben Miller of Parkersburg, President-elect of the State Medical Association. Dr. C. H. Maxwell, past President made a few remarks. About seventy-five doctors were present. Invitations were sent to every physician in the Second District and also the adjoining counties. We also had representatives from the adjoining state of Maryland.

Dr. Charles R. Habilston, Associate Professor of Medicine, University of Maryland, was the speaker. He gave a most interesting talk on "Primary Carcinoma of the Lung," illustrated with lantern slides. The discussion was opened by Dr. MacGregor. He was followed by Dr. Evans, Hopement; Dr. Stevens, of Fairmont; Dr. Cherry of Clarksburg; Dr. Brake of Clarksburg, and several others.

Following this an elaborate buffet luncheon was served by Mrs. Pettit. Her hospitality was appreciated by all present. We always look forward to our annual meeting at Hopemont.

G. R. MAXWELL, *Secretary.*

CABELL COUNTY

The regular meeting of the Cabell County Medical Society was held at the Hotel Pritchard on Thursday, August 10, with a good attendance. A most interesting case report was presented by Dr. I. I. Hirschman, Huntington, and a number of important business matters were discussed.

W. W. STRANGE, *Secretary.*

GENERAL

Dr. Chester R. Ogden of Clarksburg sailed last month for Norway on an extended tour of the northern European countries. He expects to return about the middle of September.

Dr. R. J. Condry of the staff of the Davis Memorial Hospital, Elkins, sailed on August 11 for Europe where he expects to spend about three months in various European clinics.

DR. FRED STANSBURY

Dr. Fred Stansbury, 43, of Beckley, died at a hospital there on August 10. He is survived by his widow and one son. Two brothers, Herbert Stansbury of Beckley and Harry A. Stansbury, athletic director at the University, also survive.

Dr. Stansbury was graduated from the Loyola University college of Medicine, Chicago, in 1919 and shortly thereafter began the private practice of medicine at Beckley. He was well known throughout Raleigh county.

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ENDOSCOPIC REVISION OF THE PROSTATE*

By R. D. GILL, M. D., F. A. C. S.
Wheeling, W. Va.

It seems rather a paradox that so important a structure as the prostate gland and one so liable to grave pathological changes had not assumed an important place in the surgical sun until the last three decades. Symptoms of prostatism have been known and described from time immemorial. According to Galen, Herophilus first used the word "prostate". Its discovery, however, is attributed to Nicolo Massa, a Venetian physician, who died in 1563. About the middle of the sixteenth century Riolanus first suggested that the bladder might be obstructed by swelling of the prostate. It is quite probable that the first prostatic tissue ever removed was done perineally by some of the ancient lithotomists. Covillard is reported to have done this in 1639, probably mistaking an enlarged middle lobe for a bladder stone. Perineal operations came into favor earlier than suprapubic ones due to the once wide spread practice of "cutting for stone." In the light of present tendencies, however, it is interesting to note that transurethral attempts to relieve prostatic obstruction probably antedate all other methods. John Hunter and others in the eighteenth century practiced "tunneling of the obstructing body" by catheter. It remained, however, for Guthrie, an English surgeon, to describe accurately prostatic obstruction. In 1834 he established the first regular surgical procedure for the relief of this condition which he called "division of the bar at the neck of the bladder." For this operation he designed an instrument, a catheter carrying a concealed blade, the evolutionary progenitor of all modern "prostatectomes" and performed with this instrument the first transurethral operation on the prostate. The great French urologist, Mercier, devised many different instruments for the same purpose from 1839 to 1852. With the advent of electricity, Bottini, in 1876, improved the Mercier instruments by adding a galvano-cautery blade attempting to control hemorrhage. Disastrous results due to sloughing, hemorrhage and infection, however, were very common and after a period of several years the procedure fell into disrepute. With the coming of aseptic surgery in general and the development of prostatic surgery in particular by McGill, Freyer, Fuller, Young, Keys and many others, transurethral methods lagged. In 1909, however, Young developed his punch instrument for the sole purpose of removing, urethrally, fibrous obstruc-

*Read before the Section on Surgery, W. Va. State Medical Association, at Charleston on May 22, 1933.

tions of the bladder neck that could not be adequately removed by open operation. This instrument and modifications thereof continued to be used for this purpose *only* until 1920 when Caulk with his cautery punch began attacking true hypertrophy of the gland, believing that he could remove sufficient amounts of tissue to restore normal bladder function. It is well to pay tribute to Dr. Caulk's untiring and never-ceasing energy in this work for he, for the most part, fought a lone battle. The great majority of urologists preferred not to attack the hypertrophied prostate transurethrally and reserved the punch instruments for the fibrotic contracted bladder necks and fibrous bars. With the coming of the great mechanical and electric era transurethral surgery was not destined to come to a stand still. I shall not attempt to trace historically and minutely the rapid development of this work during the last few years. Suffice it to say that through the most brilliant efforts of T. M. Davis of Greenville, South Carolina, McCarthy[4] of New York, Stern, Day, Foley, Bumpus, Kirwin and many others there have been developed instruments of remarkable precision and electrical cutting and coagulating currents of astounding qualities. In brief, the procedure of attacking prostatic enlargements per urethram has been changed from a blind bloody operation, a stab in the dark, to a highly technical and scientific instrumentation under direct vision and control. During the last eighteen months urological literature has been flooded with reports of this work and one can surely say that the prostate is now occupying the center of the surgical stage, a place it has rightfully deserved for many years. There has been no new treatment or new operative procedure brought forth in recent years that has attracted such wide attention both among urologists and the whole profession; indeed it has even become common gossip among many of the laity. From this extraordinary publicity doubtless some good things will come but also there may be some outgrowths that are exceedingly distasteful.

When the reports of this work first began to receive attention there was a tremendous wave of enthusiasm. The reports were all good, mortality rate was exceedingly low or nil and the procedure was discussed as being a very minor operation with nearly perfect results. Some enthusiastic writers envisioned that the operation of prostatectomy was soon to become entirely obsolete. It appeared as though the prostatic millennium had come. More recenlly, however, many observers have dampened the fire of enthusiasm to a considerable extent, reporting numerous accidents and trouble with the procedure, with mortality rates varying from four to five percent to twenty or twenty-four percent; and so the pendulum seems to be swinging in the opposite direction. There must always be some difference of opinion. Medical history as well as history in general repeats itself. Whenever any new medicine is advanced or any new surgical treatment is advised there are always the ultra enthusiasts. There are also the skeptics and those who belittle the new and modern advances upon the old established methods. One must give due credit to the optimists for it is their ingenuity and spirit of exploration that speaks for progress in all science rather than the skeptical ploddings of the pessimists. It appears to me, however, that a position of middle ground is by far the most sensible for the great majority of us who have as our job the correction of an obstruction at the bladder outlet. I feel that we should not be extremists or faddists, but that maintaining an attitude conservative and analytical we should give praise where praise is due, recognizing and accepting progress when it is well proven. At this time I consider that it would be worth while to attempt to evaluate the procedure and define its indications or limitations in the light of my own experience and the experience of many others. Although the method is quite new and we know not what future developments may bring, I believe the time has come to take stock of ourselves, so to speak, and from experience, so far and our knowledge of physiology and pathology deduce if possible a more reasonable basis upon which to attempt

the alleviation of bladder neck obstruction. In other words we should seek now to determine the constant arc to be described by the normal steady swing of the pendulum after the extreme gyrations have ceased. It will be my purpose, then, first to point out certain fundamental conceptions of the condition of bladder neck obstruction and second to give my opinion as to the method of choice in the correction of the most common types.

It seems paramount to me that in selecting an operative procedure due regard for the pathology present should be the foremost consideration. If a gastric surgeon selected the identical operation for every type of stomach lesion his results could not always be the best. I believe the same is true in most instances and quite true in the instance of prostatic obstruction, for here the pathology certainly varies greatly. It is with this in mind then that we call attention to the well recognized and fundamenal features of the obstructing prostate.

To begin with there are *three* varieties of pathology found at the bladder neck that lead to urinary retention and bring the patient to the surgeon for operative relief. *First* and most common of these is true glandular hypertrophy; *second*, median bar formation and *third*, carcinoma of the prostate. To discuss in some detail each of these three types, at least to review some of the well established pathological facts, seems pertinent in order more rationally to anticipate the success and future of transurethral surgery.

1. *Glandular Hypertrophies.*—In this class falls all of the types that we usually think of as enlarged prostates except the malignant ones. It is the usual benign prostatic hypertrophy. Urologists, in fact the whole profession, owe a great debt of gratitude to Dr. Alexander Randall[3] of Philadelphia, who has done more than anyone to help us understand more clearly the morphology and surgical pathology of prostatic enlargements. The prostate is a complex glandular organ consisting of usually five lobes or groups of compound racemose glands. Enlargement of any or all of these different groups of glands may take place and thereby produce a great variety of pathological pictures. The glandular hypertrophies, according to Randall[3], are of the eight different types.

1. Simple bilateral lobe hypertrophy.
2. Solitary posterior commissural hpyertrophy.
3. Bilateral and commissural hypertrophy.
4. Solitary subcervical lobe hypertrophy.
5. Bilateral and subcervical lobe hypertrophy.
6. Bilateral, subcervical and commissural hypertrophy.
7. Anterior lobe hypertrophy.
8. Subtrigonal lobe hypertrophy.

The last two varieties are relatively quite rare and will be eliminated from this discussion. A brief description of the other types and the problems that each present follows:

1. The simple bilateral lobe hypertrophy represents two separate glandular masses growing independently of each other well encapsulated and does not produce dilatation of the internal sphincter or protrusion into the bladder lumen. This enlargement produces obstruction by compression of the urethra. During cystoscopy the lateral lobes are often seen to impinge one on the other. This type is often spoken of as an intraurethral bilateral lobe enlargement in contradistinction to an intravesical enlargement of the lateral lobes. It is in this type one may find a massive hypertrophy but no residual urine; also frequently, from some form of prostatic irritation, there occurs swelling and congestion of the gland and acute retention follows. After repeated catheterization or drainage by the indwelling urethral catheter one may be surprised that the patient is able to void as well as before and without residual. In applying transurethral surgery to this type of enlargement one is apt to interpret improvement as the result of the operation when as a matter of fact relief might have been as pronounced following catheter drainage alone. Technically the procedure presents difficulty in that when the instrument is introduced the lateral

lobes are spread apart or pushed away rendering resection of sufficient obstructing tissue awkward. In this type of prostatic enlargement the perineal operation, in my opinion, is the operation of choice. If it is attempted suprapubically the internal sphincter, which is not dilated, is apt to be injured. If the operation is carried out perineally it can be done entirely extravesically and without danger to the internal sphincter. Certainly if transurethral methods are persistently employed there is most apt to be a great number of eventual failures in spite of early apparent successes.

2. *Solitary posterior commissural hypertrophy* arises from what anatomically is called the middle lobe. The posterior prostatic commissure is the glandular mass of tissue lying under the urethra and trigone and bridging between the two lateral lobes. Here hypertrophy is quite common and often occurs without hypertrophy in other parts of the gland. It can readily be seen that with much enlargement here the function of the trigone is interfered with; it will be remembered that the function of the trigone is to open the internal vesical orifice at voiding. Contrary to previous opinion that the mere presence of an obstructing body at the bladder neck was sufficient to produce residual and retention, it is thought today that it is the interference with the normal action of the muscular elements of the bladder neck. Chief among these is the trigone. This reasoning more logically explains why a relatively small enlargement, strategically located, will produce acute retention; whereas, one much larger may produce only moderate urinary difficulty. Posterior commissural hypertrophy when relatively small and situated chiefly at the posterior vesical lip has been referred to clinically as glandular median bar. This should not be, for it is confusing two entirely different pathological entities. A commissural hypertrophy is in no sense a fibrotic bar.

Now, as to the surgical relief of a solitary posterior commissural hypertrophy, or "middle lobe" as it is frequently termed, it seems to me that one has to apply only common sense. If the enlargement is huge, having dilated the internal sphincter greatly, pushing it upward and backward and herniating itself into the bladder lumen, actually occupying a goodly portion of the general bladder cavity and rendering cystoscopic vision quite inadequate, it would seem quite foolish to attempt resection. Just recently we did a suprapubic cystostomy on such a case and the middle lobe was about the size of a small orange. I am sure if it had been removed at the time it would have weighed well over 100 grams. To attack such an enlargement transurethrally might almost be compared to moving a straw-rick one straw at a time. In smaller hypertrophies revision or resection should in my opinion be the operation of choice and should produce excellent results. Suprapubic enucleation for the very large growths is much less difficult than perineal and much less likely to injure normal anatomy. In the great majority of cases the enlargement is probably sufficiently small that transurethral surgery is applicable and indicated. The point I wish to emphasize, however, is that when the surgeon is confronted with a tremendous hypertrophy obviously rendering resection wholly inadequate, he should not allow himself to be a faddist and attempt resection, thereby endangering the life of his patient with practically no chance of establishing permanent relief. Such practices can only bring the operation into disrepute and probably ruin the patient's chances of securing an operative cure.

3. *Bilateral and posterior commissural hypertrophy* is simply a combination of the two previous types. In bilateral lobe enlargement *only*, it will be remembered that there is no intravesical protrusion. When there is an accompanying posterior commissural enlargement, however, the internal sphincter is dilated and the lateral lobes grow upward, herniating themselves through the sphincter into the bladder, usually becoming much larger than the middle lobe. This is a very common type of enlargement, particularly in rather advanced cases, and is characterized clinically by persistent large residual urine, a

large, dilated, thin-walled bladder and many times large, dilated ureters and kidney pelves with marked kidney deficiency. It is with this type of enlargement that some of the poorest surgical risks are seen and it is, therefore, most important that they have adequate pre-operative treatment before any type of surgery is contemplated. Bilateral and posterior commissural lobe enlargement is referred to by some as the "horse collar hypertrophy." In some instances the lateral lobes cause great tumefactions in the bladder. Here again, I feel, the matter of applying the proper surgical procedure depends upon the extent of enlargement. In the earlier cases resection of the middle lobe and also resection of intravesical lateral lobes will produce very gratifying results. In the more advanced cases where it is technically impossible to resect properly sufficient of the lateral lobes, the resection of the middle lobe alone may allow the lateral lobes to fall together in the midline and produce a more marked obstruction. Another point in this type of enlargement is the estimation of the intraurethral lateral lobe encroachment. If, in a given case, there is marked compression of the urethra by the lateral lobes and yet it appears quite possible to resect all of the intravesical protuberance of the gland, it is doubtful that the transurethral approach should be attempted. For in many of these cases the bladder musculature is greatly thinned out and weakened, and even after the intravesical enlargement is removed, the bladder does not have sufficient power to press aside the intraurethral lobes and allow normal evacuation. This may account for some failures in this type of enlargement. Suprapubic enucleation is preferable in the very large "horse collar hypertrophies", a type which frequently grows to extraordinary size.

4. *Solitary subcervical lobe hypertrophy* is enlargement of the group of gland acini that lie just under the mucous membrane of the urethra between the posterior vesical lip and the verumontanum. Albarran first called this group of gland acini the "subcervical gland" and many refer to hypertrophy of this region as Albarran's lobe. When enlargement occurs here it first presents as a protrusion into the urethra but gradually pushes upward through the internal sphincter, acting as a ball valve to produce marked obstruction. It can readily be seen that obstruction may be quite complete yet the growth be very small. This growth is the second variety of true "middle lobe hypertrophy" and as it originates sub-urethrally it is covered only by mucous membrane and not at all contained within the prostatic capsule. When such a lobe is viewed through the open bladder it is seen presenting through the internal os as a pedunculated tumor being attached down in the urethra by a slim pedicle. When the enlargement is small and does not interfere with introduction of the electrotome and its manipulation, transurethral removal should be ideal and the functional result should be excellent. When the hypertrophy protrudes into the bladder and presents as a large lobe, the procedure of choice is surgical removal through the open bladder by simply twisting the lobe on its pedicle until it is severed or pinching off its pedicle between the fingers.

Types five and six, namely, *bilateral and subcervical lobe hypertrophy and bilateral, commissural and subcervical lobe enlargements* present no pecularities deserving of special description. These conditions are simply a combination of the previously mentioned types presenting hypertrophy of all three or four lobes. Because of the uniform and generalized enlargements of all the lobes we are likely to encounter our largest total hypertrophies in these classes; indeed sometimes these enlargements are tremendous, weighing between 100 and 200 grams or more. For obvious reasons transurethral surgery is less likely to be feasible or effective and if practiced routinely, will meet with utter failures and disastrous results. It may be well to mention that when subcervical lobe enlargements occurs in conjunction with uniform enlargement of the other lobes it is difficult to diagnose at times and is apt to be overlooked if prostatectomy is done by the perineal route. I have seen two cases where large bilateral

lobes were very nicely removed perineally but the patients were still unable to void due to a plugging of the internal os by a subcervical lobe, which was entirely undiscovered at both cystoscopy and operation. This accident could not occur with suprapublic exposure, which I feel is the procedure of choice in the majority of the huge mutilobular hypertrophies.

To summarize, then, in the case of true glandular hypertrophies it is thought that transurethral approach is indicated in any of the various types mentioned except bilateral lobe enlargement only, providing the hypertrophy is sufficiently small not to distort the bladder neck and urethra in such fashion that the highly technical operation, which necessitates free movement of the instrument and unhampered vision at all times, cannot be definitely and unhesitatingly carried out. The bilateral lobe enlargement which encroaches upon the urethra without protrusion into the bladder is best attacked perineally. The terrifically enlarged, boggy, spongy, easily bleeding type of gland that frequently occupies a large portion of the bladder cavity and usually represents a generalized enlargement of all parts of the gland had best be removed by suprapubic enucleation.

II. *Median Bars.* — During the last twenty years median bars have been much written and talked about. In 1834 Guthrie said, "This bar at the neck of the bladder has, I believe, been mistaken for an enlarged prostate; it has not, at all events, been considered as a separate disease." While in the urological ranks the pathology of this condition is well understood, I do not believe the profession as a whole thoroughly appreciates the difference between obstruction due to median bar and that caused by prostatic hypertrophy. While they both are conditions of the prostate and both produce urinary obstruction and retention, they have no other similar features. We have seen that in hypertrophy of the prostate there is an adenomatous enlargement of the gland or various parts of the gland presenting differently shaped protuberances into the urethra or bladder, and always there is an actual increase in the total size of the gland. In median bar formation, on the other hand, the prostate is not enlarged at all, but smaller than normal. The true pathology is a replacement of much of the normal glandular elements by fibrous tissue; the eventual shrinking and contraction which produces a stenosis of the internal vesical orifice, and an acute elevation of the posterior vesical lip. When any instrument is introduced into the bladder neck one can usually notice immediately the lack of the normal elasticity of this region. When viewed cystoscopically the posterior vesical lip is elevated a centimeter or more, presenting a thin rigid dam across the bladder neck. On the urethral side of the bar there is a sharp drop to the floor of the urethra and a very characteristic finding is the verumontanum drawn up to a point almost at the foot of this declivity. This marked shrinking and fibrosis of the gland is thought to be unquestionably due to long standing infection of a rather severe character. This is the type of gland that is seen many times in the old roué and is very frequently seen in the individual who has had a long standing urethritis or urethral stricture. In some localities, the idea still prevails that when a man suffers from any prostatic obstruction he is being repaid for the sowing of his wild oats, that there is some definite connection between venereal disease, gonorrhea in particular, and prostatic hypertrophy. The basis of such ideas probably originated with the pathological condition which we are now discussing. Patients with true glandular hypertrophy should not be unjustly accused and looked at askance. While we cannot absolutely define the cause of prostatic hypertrophy as yet, it is my belief that if a given patient approaches the male menopause with a normal prostate, that is, one not greatly infected or incipiently fibrotic, his gland will eventually hypertrophy, to some extent, at least. I further believe the day is not far distant when we will find the true cause of hypertrophy in the imbalance in the endocrine system that ensues during male senescence. Be that as it may, I believe that it is our duty to relieve the disease of any

stigma that might embarrass certain patients and prevent them from seeking relief earlier.

Median bar formation has been given many different names. The condition has been called "contracted bladder neck," "fibrosis of the vesical orifice," "atrophy of the prostate," "sclerosis of the internal sphincter" and by the French "prostatisme sans prostate." For a long time it has been generally agreed by all that the method of choice for handling bar cases was some form of transurethral surgery. There may be many differences of opinion regarding other types of pathology but I dare say there is no other urological lesion in which opinion as to method of treatment is in such full accord.

As was mentioned before, Young originally designed his punch instrument for the treatment of this specific lesion, and with the modern instruments where the operation becomes a more scientific nicety under full vision and with adequate control of hemorrhage, it seems to me that transurethral excision should always remain the treatment par excellence for median bar.

III. *Carcinoma of the Prostate.*—Carcinoma of the prostate is a very discouraging disease to the physician and an almost unbearable and ghastly ordeal for the patient. There is little that is new regarding the pathology of this condition except for the correction of the idea that malignancy nearly always originates in the posterior lobe. Ample proof has been brought forward to prove that carcinoma may originate in any portion of the gland. In many instances of malignancy the urethra is encroached upon and surrounded by a hard irregular well fixed mass, which grasps the cystoscope in a rather characteristic manner. By this peculiar hugging of the instrument the trained cystoscopist can frequently surmise that he is dealing wtih a carcinoma when rectal palpation of the gland is rather inconclusive. There is nothing particularly characteristic in the mechanism or pathology of obstruction caused by carcinoma, except possibly that when the obstructive process begins it progresses more consistently and methodically to the ultimate end in a shorter period of time. Now as to the election of surgical treatment. I personally feel that when a malignancy is strongly suspected by rectal palpation of the gland, any surgery that has for its purpose the permanent cure of the disease is most likely to meet with failure. If, by rectal examination, the gland is only slightly suspicious and a radical prostatectomy is done, in some instances a cure may be attained. If there is no suspicion at all of malignancy and for other reasons the gland is surgically removed and, on section, a small area of carcinoma is found, accidentally, the best chance for complete cure has been given the patient. In the great majority of instances, carcinoma of the prostate is inoperable so far as cure is concerned, the lesion having progressed to produce urinary obstruction, by the time we see the case. Our problem then is to relieve the bladder neck obstruction as easily as possible and keep them as comfortable as possible. Endoscopic revision has one of its widest uses in these cases, and in many instances the patients can be carried along, voiding without difficulty, with little or no residual, until Providence is kind enough to relieve them of their earthly suffering. Occasionally, however, the malignancy breaks through the prostate capsule, involving the whole bladder neck and even the bladder proper, and presents large sloughing masses which recur very rapidly after resection. In such cases I feel that the only humane thing to do is to establish a permanent suprapubic drainage, to relieve the patients of their suffering.

In reviewing, then, the three types of bladder neck obstruction commonly encountered, we find that in two of them, median bar and carcinoma of the prostate, this new method of endourethral surgery might well be considered the method of choice in the great majority of cases. These two types probably comprise 30 to 40% of obstructive lesions. The third type, namely, true hypertrophy of the prostate, is the condition concerning which the greatest difference of opinion exists. In the judgment of the author, when the answer to this question is

finally written, it will be based upon the true pathology at the bladder neck presented by each individual case. At the present I feel that we should confine our transurethral attack to the small and moderately enlarged middle lobe, the moderately enlarged middle and lateral lobes combined, and the moderately enlarged subcervical lobe. These comprise probably at least 60 to 70% of the true hypertrophies, depending upon whether the individual surgeon sees the avergae case early or late in the course of the disease. The very large, spongy, boggy prostate that bleeds readily on instrumentation had better be removed in the conventional manner. The patients with hypertrophied glands that are subacutely infected, the cases that have acute febrile reactions following diagnostic cystoscopy, and the cases whose urethræ show a rather marked inflammatory and edematous reaction to indwelling catheter, in my opinion, also constitute contraindications to transurethral surgery. In general, I feel that any case that requires more than forty-five minutes or an hour to resect should not be attempted by this method. Roughly speaking, it may be said that between 75 and 90% of all types of bladder neck obstruction might rightfully be treated by transurethral resection.

Time does not permit a technical description of the pre-operative treatment, operation, post-operative care, complications, etc. Suffice it to say that this is not an office or minor procedure and that the identical well-established pre-operative routine for prostatic cases should be carried out in every case.

The technique itself varies greatly with the case and with the individual surgeon. There are quite a variety of instruments and power plants now available which are unquestionably quite adequate for the purpose. The matter of mastering the technique with a given instrument and becoming thoroughly adept is of much more importance than the selection of a particular instrument. It is a highly technical procedure and too much emphasis cannot be put on the fact that the operator should be thoroughly trained in endourethral instrumentations, acutely aware at all times of the imminent danger in the careless use of these instruments; above all he should have sufficient clinical and pathological training to insure the proper selection of cases. Dr Joseph McCarthy[4], one of the originators of this procedure, a master instrument designer and instrumenteur, has emphasized these points time and again.

It was intimated earlier in this discussion that this new method of handling prostatics had received considerable attention from the public. I would like to quote a paragraph from a recent paper by Dr. Bransford Lewis[6]. "Moreover, the work has been avidly taken up by the laity, and instead of relying on the experienced judgment of a urologist for the determination of the method most appropriate, they go to the ones who agree to use this marvelous and innocuous new method. It is reminiscent of the old phrase, 'without the use of the knife,' which has ever been allurement for the unthinking public."

When the time comes that the medical profession has to depend entirely upon the laity for a decision as to the type of operation to employ, we had better sell ourselves outright to the government. One good feature of the publicity, however, is that patients in the prostatic age may seek advice earlier and thereby raise considerably the percentage of hypertrophies that can be adequately treated by endourethral methods.

In conclusion, may I say that certainly we are in a period of evolution and that urological history is being written? That the new instruments designed will antiquate all previous ones for the purpose is accepted. That this new procedure recently devised will be eventually regarded as a great step forward, is unquestioned. Time alone will properly evaluate this procedure and place it in its just position in the urologists' armamentarium. Ideal prostatic surgery has been defined by Crabtree[5] as that surgery which, if possible, would provide for the patient that mechanical means of treatment which would in the shortest time give permanent and adequate relief of disability with the minimum risk to life

and the least possible chance of post-operative invalidism. It is my contention that we shall reach this ideal only through a thorough appreciation of the varied pathology of bladder neck obstruction and the application of the most rational and appropriate surgical procedure.

Discussion:

C. J. Reynolds, Bluefield: Dr. Gill has handled this subject in a masterful way. He has told us of the types of prostate this operation is adopted for. Based on my experience and that of others I am inclined to think he is rather conservative. Without question there are cases for which a radical operation is best suited. However, I disagree with Dr. Gill insofar as I am convinced that we get excellent results with those operations when the lateral lobes alone are involved. I have operated on several of these cases with gratifying results. I believe as one's skill is developed we will find that this operation can be used in a higher percentage of cases than was originally supposed.

There is one thing I want to stress and that is that this operation is not a minor operation, but a major operation. Any operation that has a risk and is technically as difficult as this is certainly a major one. As one's skill is improved naturally the operation becomes more simple to that particular individual and the risk for the patient is diminished. However, this is the case with all major operations. It is certainly more complicated than the majority of the operations performed by the general surgeon and classified as major operations.

Post-operative complications in the hands of the average man doing this work are certainly not rare. We have to consider immediate and delayed hemorrhage, epididymitis, infections of the kidneys, as well as the general complications that may tend to close the scene with these old men because most of them are in poor condition generally and have very little reserve. Prostatectomy when first developed had a very high mortality and in the hands of the general surgeon still has a high mortality, even though it has been perfected to the extent that in the best of clinics the mortality is low. Considering the fact that resection of the prostate is a new operation and one on entirely different principles we may naturally expect our complications and death rate to be as high as our average present percentage of prostatectomy. However, with the development of skill and technic and judgment as to the suitable case I believe that our death rate from resection will be much less than from prostatectomy as has already been proven.

These patients are usually old and have only a few years left and if we can give them relief with the least possible danger to their lives without sacrificing the entire prostate gland I believe it is our duty to do so. This new method is certainly not as formidable an operation as prostatectomy. The convalescence is shortened. The immediate agony of the patient is practically nil and the patient is very soon up and about and his chances for circulatory and pulmonary complications are greatly diminished. The stay in the hospital is usually about one-third the time as compared with prostatectomy. I find many patients who are willing to have a revision operation who would not consider a prostatectomy. I think the fact that this operation is not an open operation appeals to them and for this reason they will come to us earlier and not get the ill effects produced by procrastination waiting for the inevitable day when they can no longer void and come to us as an emergency.

Dr. Gill has covered this subject so thoroughly there is very little for me to add. However, there is one thing I want to emphasize: That this operation is highly technical, requires good judgment and will fall into disrepute, as so many good things do, unless its performance is confined to those who are skilled cystoscopists.

Dr. W. C. McCuskey, Wheeling: Within the last few years the question of Endoscopic Revision of the Prostate has come forcibly to the front. We all should realize that this is an exceedingly difficult and a highly technical procedure.

Unfortunately the method is all too alluring, with the result that many who are not qualified as instrumenteurs have undertaken this highly technical operation with grave results. In fact many who have not even seen the operation, and some who are not even skilled cystoscopists, have undertaken it, and as a result the average of complications and fatalities has been such as to alarm the more conservative urologists.

Recently, at a meeting of the Marietta, Ohio, Medical Society, I reported a series of 106 operations that were performed with either the Caulk cautery punch or the Stern-McCarthy visual electrome without a single fatality or primary or secondary hemorrhage.

I have elected to use the Caulk cautery punch in all the highly vascular cases, believing as I do that the cautery more completely and easily controls hemorrhage.

Much stress has been placed upon the proper selection of cases for resection during the past few years. More than four years experience with this method of removing vesical-neck obstruction has convinced me that it is the operation of choice for practically every type of obstruction at the vesical orifice. The greatest importance in this work is the selection of the operator, and not the selection of the case for the operator.

In cases of prostatic obstruction the general practitioneer should not be content merely to sound or catheterize his patient, but he should have a thorough appreciation of the causitive underlying pathology, as well as the future fatal consequences; namely, uremia and pneumonia, incident to cystitis, ascending infection and kidney and even heart complications. Such patients should be expertly investigated as soon as possible, and if found to be qualified, consideration of prostatectomy or Endoscopic Revision should not be delayed indefinitely, until the kidneys and heart suffer irreparable damage. We should give these old men a square deal in order that their final years will be spent in comfort and happiness.

G. G. Irwin, Charleston: During the past two or three years I have been chasing this subject all over the country, during which time I have heard most of the so-called big men talk on it and have seen many of them perform. I can honestly say that of all the papers I have heard, not one appears to be a fairer or saner presentation than the one we have just heard. I think Dr. Gill has considerably amplified the value of his discussion by his presentation of Dr. Randall's work on pathology and prostatic obstruction.

We must not be stampeded in this work. One man may elect to resect where another would do a suprapubic or perineal prostatectomy and in each case the conclusion will be right for the individual cases. Dr. Gill says that prostatic surgery is in a state of evolution. At a urological meeting two years ago, in joking with Dr. McCarthy, I remarked that prostatectomy had become an operation with a respectable mortality rate and now we all had to spend hundreds of dollars to buy the new equipment. I pointed out that as soon as we were all equipped sufficiently, somebody would come out with a glandular preparation and cause us to scrap it all. Dr. McCarthy replied that he and his associates were already working on that problem. So the end is evidently not yet.

In the meantime, this method is certainly a big step forward in prostatic surgery but we must insist that its use shall be limited to the cases that are best suited for it—this presupposes a cystoscopic examination.

Dr. Gill (closing): Gentlemen, I wish to thank you for your very kind discussion. A few years ago it was my privilege to present a paper before this association on suprapubic prostatectomy. Today, we have been discussing a new surgical approach to the prostate and attempting to define its indications and limitations. In the not too distant future, I sincerely hope it will be my privilege to appear again before this association to discuss benign prostatic hypertrophy and its control through the realm of endocrinology. Dr. Lower of Cleveland and his associates are doing some very interesting work along this line. Let us hope that their endeavors will be so successful that all prostatic surgery of the benign gland will be relegated to the limbo of outmoded practices.

I believe Dr. Reynolds is referring to intravesical lateral lobes. I agree with him that these can be attacked very nicely transurethrally. When the lobes are present only in the urethra, however, and are of large size, they render intraurethral resection quite difficult. This type of enlargement is relatively quite rare.

Some one asked about the type of anesthesia employed. It has been my custom to use a low spinal and only about half the normal dose. Recently I have been using Pantocain instead of Spinocain.

There is no doubt in my mind that this new method of attacking the prostate will prove to be a great boon to mankind and a great satisfaction to urologists. The time may come when all men suffering with prostatic obstruction will seek help sufficiently early that most of them may be resected. At present, I believe the procedure is applicable to seventy-five to ninety percent of bladder neck obstructions. I see many patients who have procrastinated for years and whose glands are tremendously enlarged. Resection in such cases to me is not only unscientific but ridiculous. I believe that the majority of urologists will bear me out in this contention.

Many men also differ a great deal about their results. I have visited clinics where I was shown resected patients and I was told by the operators that certian ones had "an excellent result." After watching the patient void, I have often had a different opinion as to the result. This reminds me of some of the war time aviators definition of a good landing—"any landing that could be walked away from." I have seen quite a number of patients

who have been resected and "walked away from" and allowed to eke out a miserable existence because the operator fitted the patient to the operation instead of the reverse process.

The point I wish to emphasize in this discussion is that there are no "cure alls" in medicine; that each case requires an individual diagnostic study; that if one is honest and has an intelligent conception of the existing pathology of bladder neck obstruction, he will select the surgical approach that will adequately and efficiently correct the given pathology with the least possible risk to the patient. If transurethral resection of the prostate be considered in this light and not misused or abused, I believe it will finally be adjudged the greatest innovation of the century in urological surgery.

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AN OVERLOOKED FACTOR IN SUSCEPTIBILITY TO THE COMMON COLD

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THERE is probably no more formidable enemy to human health and comfort than the common cold, the widespread incidence of which continues to defy both etiologic explanation and prophylactic control. This ubiquitous malady not only inflicts upon this country a direct economic loss of four hundred and fifty million dollars annually*, but paves the way to a host of refractory catarrhal difficulties that impose a further sacrifice of occupational efficiency and an ever increasing need for the largest group of specialists in the entire field of medical practice.

Recent efforts to curb the ravages of this universal plague have been focused upon the possible identification of a specific causative agency, the assumption being that prospective laboratory findings offer about the only hope of success. There has been no definite proof, however, that a distinct bacterial cause exists, and even if one were ultimately isolated it is questionable whether the perplexities of the problem would be materially lessened. It is rather difficult to visualize serological protection against a disease which itself tends to augment, rather than diminish, subsequent susceptibility. More readily conceivable are the altruistic possibilities that might accrue from the detection of an eliminable anatomic factor in man's vulnerability to catarrhal infections. Theoretically, a structural abnormality could induce lowered resistance to organisms normally present in the nose and throat and, if common to a great many individuals, might more logically explain the prevalence of "colds" than the supposed aggressiveness and specificity of an undiscovered bacterium or virus. Such an hypothesis is quite consistent with the negative results of bacteriological investigation, and is by no means a vain conjecture. It is actually true that clinical research has overlooked one correctable somatic impairment whose predisposing influence is empirically and convincingly demonstrable, and whose delayed recognition seems measurably responsible for the erstwhile futility of the fight against the common cold.

This overlooked factor is none other than that apparently innocuous structure,—the uvula,—so often carelessly designated as "the palate" by both the laity and the profession. This devitalized and physiologically superfluous appendage has never received any critical consideration beyond that accorded it

*Based upon statistics of the U. S. Public Health Service.

by Hippocrates, who recognized its frequent elongation as a mechanical cause of paroxysmal coughs and advocated staphylotomy as a corrective measure. Unfortunately, Hippocrates' suggestion has never attained great popularity. Had its practical utility in dealing with innumerable cases of convulsive coughing and incessant clearing of the throat been properly appreciated, a vastly more important potentiality of this procedure would inevitably have come to light long before the twentieth century. The main impediment to this revelation has been, and still is, a superstitious and erroneous conception of the functional importance of the uvula, in consequence of which staphylotomy has been inadequately performed even when "cautiously" resorted to.

A customary degree of hesitancy and conservatism dominated the writer's early employment of staphylotomy, but it soon became apparent that a bolder procedure involved none of the dreaded risks and was much more efficacious and dependable. Gradually this was found to be true up to the point of removing the uvula in its entirety,—an operation which has since been performed many hundreds of times, and with results as unprecedented as the operation itself. Routine use of "STAPHYLECTOMY" for the relief of habitual clearing of the throat and an amenable type of paroxysmal cough eventually revealed the rather amazing fact that it also exercised a remedial influence upon catarrhal conditions of the entire upper respiratory tract. Primarily, this was not an objective disclosure, nor was it even a suspected possibility. It was purely accidental.

The original observations must be accredited to patients themselves, who repeatedly called attention to various unanticipated benefits conferred by staphylectomy,—notably a relative freedom from "colds",—but whose alleged experiences were at first regarded as sheer products of the imagination. Except for the repetition and enthusiasm of these incredible contentions they might not have aroused the slightest interest, for there seemed to be, at that time, no logical reason to suppose that the mere removal of a small piece of redundant tissue from the faucial arch could produce the remote and phenomenal effects which these patients were wont to ascribe to it. About twenty years have now elapsed since a skeptical investigation of this apparent myth was thus inaugurated, and the unique experience to which it led has afforded incontestable proof of the provocative role of the uvula in uncontrollable recurrences of the common cold and in the intractability of other catarrhal difficulties involving both the nose and throat.

By painstaking follow-up methods and the helpful coöperation of interested patients it has been determined that staphylectomy checks susceptibility to "colds" in excess of fifty percent. In occasional instances a complete absence of recurrences has been reported for periods of several years, and rarely have indifferent results been observed. Exact percentages of efficiency can not be tabulated, the controls in this investigation having necessarily been in each case the past experiences of the subject himself. Patients are seldom able to state accurately the number of attacks per year they have previously encountered, but they can make postoperative comparisons that are sufficiently definite for practical purposes, and the contrast is usually so sharp that a precise ratio becomes relatively unimportant. What applies to the comparative frequency of "colds" before and after staphylectomy is equally true concerning the abated intensity and duration of infections that may develop after the uvula has been removed. A peculiar phase of the latter observation is the mildness or entire absence of sinusitis in cases where this had invariably been a troublesome accompaniment or sequel of rhinitis prior to operation.

The effectiveness of complete removal of the uvula has been substantiated not merely through subjective information, but by significant and unmistakable changes in both pharyngeal and nasal structures. The most conspicuous of these visible effects are so prompt and decided in some instances as literally to defy belief. Chronic post-nasal en-

gorgement is reduced to a degree that definitely facilitates nasal breathing, and the characteristic signs and symptoms of pharyngeal and naso-pharyngeal catarrh are rendered permanently less pronounced. These clearly discernible effects are more than suggestive of a contributory culpability of the uvula in marked catarrhal tendencies; in fact they have been so constantly observed as to admit of no other interpretation.

The part played by the uvula in predisposition to the common cold and kindred affections may not appear so strange and inexplicable if we take into consideration the extremely poor vascularity of this structure and its other correspondingly sparse histologic components, which would unavoidably render it less resistant than the substantial and well-vascularized portions of the pharynx. Furthermore, its anatomical location is especially favorable to the accumulation of ceaseless installments of bacteria,—dangling directly in the pathway of both respiration and deglutition. It is thereby subjected also to more or less mechanical abuse, particularly in the act of snoring. These combined characteristics make the uvula an ideal bacterial nidus upon which micro-organisms gain a flourishing foothold, subsequently invading in overpowering numbers the posterior nares and other contiguous areas that might otherwise be capable of maintaining a relatively healthy status. (In striking conformity with these practical considerations is the well-known fact that the earliest symptom of an incipient coryza is not referable to the nose, but is almost invariably a sensation of dryness and pruritic discomfort in the vicinity of the soft palate, nasal involvement being a somewhat delayed development.)

This line of reasoning may appear fundamentally defective in that it wholly ignores the supposed functional requisites of the uvula. But does the uvula really serve any distinct or valuable purpose in the human being, or is it a superfluous and rudimentary structure? In lower animals it is essential to a reflex expulsive mechanism of vital importance. During the act of panting it thus affords protection against the hazardous ingress of flying insects and other foreign material, but aside from its participation in this highly necessary defense of the larynx and pulmonary tract it serves no other purpose for which the major portion of the normal velum palatinum does not alone suffice. The life and habits of primitive man undoubtedly demanded similar protection, but it has been a long, long time since man ran through the wilds,—panting. Since civilization abolished this need of the mouth as an accessory avenue of breathing the uvula has had virtually no function to perform, and protracted disuse has relegated it to the category of obsolete and decadent structures. As in the case of the appendix vermiformis, cessation of function has impaired its blood-supply, decreased its size and substance, lowered its vitality in general and transformed it into a mere rudiment and an insidious pathogenetic factor. Its pathological influence upon adjacent structures might be likened to that of an extraneous growth similarly situated, as there is a direct parallel in the observed effects of excision. Corroborative evidence of this supposed evolutionary and diminutive change in the physical characteristics of the uvula is afforded by a comparison of this almost cylindrical remnant, as it now exists in the human being, with the substantial, broad, triangular curtain suspended in the throat of the lower animal. Scores of dried specimens in the writer's possession bear convincing testimony to this advanced degenerative transition.

Within the past year an interesting counterpart of this hypothesis appeared in the editorial columns of a metropolitan newspaper under the heading: "COLDS AND EVOLUTION". Although written in the abstract, and with no implied reference to the uvula, this article presented a truly prophetic assumption that justifies its quotation, in part, as follows:

"There has been taking place almost insensibly in biological science, these last decades, a change of emphasis not well appreciated even by the biologists. The theory of evolution no longer is regarded as something to be proved. This has been done. In-

stead, the essentials of the theory now may be accepted as guiding principles in explaining other facts still unclear or in exploring other circumstances still unknown. If the anatomist finds, for example, some bodily organ or structure apparently useless to its modern possessor, it is legitimate for him to assume that this organ once was necessary and that some change in the habits or circumstances of the species has lessened its utility. The familiar example is the human appendix. THE SAME PRINCIPLE SHOULD APPLY TO THIS MYSTERY OF COLDS. It is impossible to accuse Nature of deliberately aiding the invasion of men's throats or noses by harmful germs."

The author of this article probably did not actually foresee an early substantiation of his theoretical surmise, but it is nevertheless true that the uvula is the evolutionary agency involved and that its general recognition as such will render this "mystery of colds" far less enigmatical.

There is no pre-operative means of gauging the pathogenic culpability of the uvula in cases of marked susceptibility to the common cold. Neither its size nor any other observable characteristic affords a dependable index to the advisability of excision, for it has been found that an exceptionably small uvula may be a source of pronounced disturbance and that it is not the elongated type only that definitely contributes to lowered nose and throat resistance. Staphylectomy may therefore be considered a justifiable and advantageous procedure in practically all cases exhibiting aggravated catarrhal tendencies, its efficacy being determined by the thoroughness of the operation and not by the dimensions nor the consistency of the tissue removed.

Denunciation of this radical proposal may be dictated by popular prejudice, but a practical and reliable estimate of its alleged rationality and merits is readily available to every member of the profession. The means is extremely simple and clinical material everywhere abundant.

Staphylectomy is such a minor procedure that it hardly admits of a technical description. It exacts no unusual skill of the operator nor does it demand special facilities. The topical employment of Cocaine, or Larocaine (Roche), in sufficiently generous amounts renders the operation practically painless. The use of both hands being essential, it becomes necessary for the patient to manipulate the tongue-depressor, which he or she can be instructed to do even more expeditiously than a trained assistant. Active hemostatic measures have never been required, although the possibility of their need has at times been anticipated. Only a trivial amount of bleeding is ordinarily witnessed and spontaneous arrest usually takes place in from one to five minutes. In many instances there is practically no hemorrhage at all. Post-operative care is a negligible consideration, but patients have, when practicable, been kept under daily observation until the wound was fully healed. The importance of removing the uvula in toto can not be too strongly emphasized, as no compromise between staphylotomy and STAPHYLECTOMY will yield results clearly confirmatory of the original findings reported.

Superstitious aversion to complete removal of the uvula has for ages obscured the possibility of an epochal rhino-laryngological achievement, for only through the experimental employment of staphylectomy would it be possible to glean the facts that are indispensable to success in the long attempted conquest of "colds" and related nose and throat disturbances. This obstructive prejudice, although universal, is entirely unwarrantable. Over two thousand staphylectomies have revealed not the slightest justification for it. In the hands of the writer the procedure in question long ago passed from the stage of experimentation to that of established clinical utility, the enormous scope of which will prove no less astounding to future investigators than it has in the course of this anomalous experience.

DIRECT CONTACT DISEASES

Direct contact and direct introduction of germs from one body to another constitute a large group of diseases, and this group is discussed in part VIII of the series "Progress in Preventive Medicine" by Dr. P. M. Ashburn.

PRENATAL AND MATERNAL CARE*

By JAS. R. BLOSS, M. D., GILBERT A. RATCLIFF, M. D.
and EDWIN J. HUMPHREY, M. D.
Huntington, W. Va.

THE members of this Committee submit their report with trepidation. We did not realize the magnitude of the task assigned to this Section for study, when asked to undertake a gathering of data upon which to base a report on Prenatal and Maternal care in West Virginia.

We wish to acknowledge our deep indebtedness to the Chairmen and members of the various Sub-Committees, viz:

Sub-Committee I—Dr. Harry G. Steele, Bluefield, *Chairman.*

Sub-Committee II—Dr. B. C. John, Morgantown, *Chairman.*

Sub-Committee III—Dr. Walter N. Rowley, Huntington, *Chairman.*

and to the State Health Commissioner's office for statistical data to be included under the report which should have been made by Sub-Committee IV. Without the enthusiastic interest, support and hard work of these we feel it would have been impossible to have accomplished anything in this study. We take this opportunity to express our appreciation of their invaluable assistance.

We will present to you a summary of the report of each of the Sub-Committees, and their endeavor to present something of concrete value as recommendations, as they appear to the general committee.

The effort of Sub-Committee I, was to make a survey to indicate the amount of obstetrical training possessed by general practitioners and specialists in West Virginia. To include a survey of training and education of nurses for obstetrical service; educational supervision and control of obstetric practice by mid-wives, and the education of the laity and lay workers.

This committee sent out something more than two hundred and twenty-five questionnaires. Replies were received from fifty odd. The study of these is illuminating.

First was the question as to the number of women delivered each year. This varied from two to one hundred and eighty. The average is sixty-one per year.

Next was the matter of obstetrical training possessed by those doing obstetric practice. It showed that the average length of the internships was fourteen months. The number of deliveries made during the internships varied remarkably, but the average as stated was one hundred and forty-nine. One reply noted that had made or assisted in over one thousand deliveries before graduation, and had seen more than three thousand deliveries made by others before graduation. An exceptional opportunity for training certainly!

Fifty of those replying stated that they have never taken a post-graduate course in obstetrics. The remainder have taken from one to five such courses, averaging thirteen and one-half weeks each. The replies to the question as to the amount of study devoted to obstretrics is interesting. This varies from "very little," "for reference only," "review once a year," to "almost daily, one to three hours."

It was not possible for the Committee to secure facts as to the special training, in this state, of nurses and midwives for obstetric service. All of the hospitals operating a training school for nurses state thta they have a course in obstetrics. How thorough this may be and how much practical training in actual experience is given was not determinable. There was no discovered provision for the education of the laity and lay workers.

Sub-Committee II, dealt with the study of the mechanism of furnishing proper prenatal and maternal care as it affects the mother, the

*Read before the White House Conference at Charleston on May 30, 1933.

fetus and the newly-born in rural and urban communities; in the home and institutions, and for various racial groups (including hospital facilities).

This committee sent out fifteen hundred questionnaires. Fifty returns were received. A study of these replies gives the following interesting facts.

Under *Prenatal care* this committee discovers that there are listed three prenatal clinics in the state, namely Bluefield, Charleston and Wheeling. The report shows that an average of five percent of the deliveries are made where the physician has not previously seen the patient. Where seen prior to delivery it is revealed that the average number of prenatal consultations is twelve to thirteen. It is stated that patients in rural communities avail themselves of the opportunity for prenatal examinations as readily as do those in the cities. The report shows that routine prenatal Wasserman tests are not made, and that this is done only when clinical history warrants it.

A consideration of natal care shows that ninety-five percent of mothers receive their obstetrical care from physicians; one percent from obstetrical nurses; three percent from midwives, and one percent from neighbor women. The replies indicate that this ratio holds good for both negroes and whites, and in the country as well as the cities.

It is further shown that in home deliveries in the preponderent majority of cases sterile drapes are not used. By a few this technique is carried out, however. Occasionally the physician wears a sterile gown. All replied that sterile rubber gloves are used. All replied that an anesthetic is used, usually chloroform, but some prefer ether. The majority state that only in emergency cases are instrumental deliveries done in the home. In ten to fifteen percent of the labors beginning in the home, it is found necessary to remove to the hospital for the termination of the labor. The replies show that first degree perineal lacerations are frequent; second degree are occasionally encountered. Immediate repair is the rule.

Discussing postnatal care the committee finds that the average number of postpartum visits is four to six. A few patients receive a check-up examination at the end of six weeks, and about three percent at the end of three months. The replies indicate that two percent of the patients require follow-up treatments for subinvolution; two percent for displacement, and one percent for latent infection.

Dealing with a survey of the hospitals, the committee finds that there are no separate maternity hospitals in the state. In the larger cities the general hospitals provide maternity service, but there are no separate departments devoted entirely to obstetrics. It is found that the total number of obstetric patients average from five to twenty.

It is reported by the committee that their survey shows that the nurses doing general hospital duty, in the majority of cases, take care of the maternity patients. In case of an infection in a maternity patient, measures are taken to isolate the patient in a private room if possible, but no routine measures are carried out. The delivery rooms are described as adequately equipped for normal deliveries. In hospital deliveries nitrous oxide and oxygen is the anesthetic of choice in five percent. Ether fifty-five percent and chloroform in forty percent, as indicated by the replies.

Sub-Committee III, endeavored to discover what interest in prenatal and maternal care was being manifested by various civic organizations. The efforts of this committee were directed toward a study of the activities of these organizations along this line; what their experiences have revealed; what they plan to do in the hope that this may lead to a better understanding, appreciation and coördination of intended future activities of all interested groups.

The Committee reports that all clubs, such as Rotary, Kiwanis, Lions, Woman's, and organizations as Red Cross Chapters and Hospitals, were surveyed relative to the operation of or plans thereof for "Prenatal and Maternal Clinics." Response was by letter or by

direct answer, and all responded in the negative.

All the organizations surveyed, except the Red Cross Chapter of Wheeling, have not been interested or are not planning any prenatal or maternal program. Response to inquiry revealed that the American Red Cross Chapter of Wheeling has a twenty-hour hour delivery service by nurses, for maternity care and home visit care.

Two cities have considered Prenatal Welfare work, and have active committees investigating the possibilities, namely, the Wheeling Red Cross and the Huntington Mother's Club, coöperating with the Cabell County Medical Society.

The investigation of this committee reveals there does not exist in West Virginia a Prenatal Clinic, Maternity Clinic, or any Maternal Welfare Unit of any kind functioning as such.

There is a profound lack of interest in, and knowledge of the importance of proper prenatal and maternal care in the State of West Virginia.

In the opinion of this committee there are three obstacles which obstruct all effort to promote or conduct a properly organized Prenatal and Natal Clinic. These are, First—an absence of a medical teaching center in the state; Second—lack of funds both state and local, to provide for the hospitalization of the needy maternity cases; Third—lack of proper education of the general public as to the value of a preventative program in maternal care.

The study of Sub-Committee IV, was to have dealt with the factors and causes of fetal, newly-born and maternal mortality and morbidity as encountered in West Virginia. It was hoped this would be a more or less accurate investigation of the various diseases and conditions which contribute both to the morbidity and mortality of the fetus, infant and mother, as found in the state, in order that definite suggestions might have been offered which would improve the opportunities of West Virginia mothers and infants at this epoch of life.

Since no report was secured from this Sub-Committee we could only call upon the office of the State Commissioner of Health, for such statistics as it was possible for them to furnish us. This request was promptly and cheerfully complied with.

STATISTICAL TABLE No. 1

Deaths in West Virginia Due to Conditions Incident to Pregnancy (Years 1925-1929—Old Classification)

Classification of Causes		1925	1926	1927	1928	1929
Accidents of Pregnancy	(Abortion (Ectopic gestation (Others specified	13	13	14	9	12
Puerperal hemorrhage		26	39	39	29	29
Other accidents of pregnancy		35	28	21	22	20
Puerperal Septicemia		91	106	83	70	67
Phlegmesia Alba dolens, Embolus, Sudden death		11	10	11	17	17
Puerperal Albuminuria, Convulsions		65	92	70	69	56
"Following Childbirth", causes not otherwise listed		11	11	8	15	13
TOTAL MATERNAL DEATHS		252	299	246	231	214
TOTAL LIVE BIRTHS		45,240	43,936	44,857	43,390	40,668
DEATH RATE, per 1,000 LIVE BIRTHS		5.57	6.80	5.49	5.32	5.26

(Years 1930, 1931, 1932—New Classification)

Includes Abortion With and Without Sepsis

	1930	1931	1932
Abortion, with sepsis	27	32	37
Abortion, without sepsis	5	3	5
Ectopic gestation	0	3	1
Other accidents of pregnancy, not including hemorrhage	0	0	1
Puerperal hemorrhage	40	28	26
Puerperal septicemia—not due to abortion	51	47	40
Puerperal Albuminuria and eclampsia	43	47	44
Other toxemias of pregnancy	22	3	6
Phlegmasia albadolens, embolus, Sudden death	23	12	9
Other accidents of childbirth—Cesarian Section	14	28	27
Other puerperal conditions not otherwise specified	12	2	2
TOTAL MATERNAL DEATHS	237	205	198
TOTAL LIVE BIRTHS	41,614	39,215	38,803
DEATH RATE PER 1,000 LIVE BIRTHS	5.67	5.23	5.1

STATISTICAL TABLE No. 2

Infant Mortality For West Virginia Under One (1) Year

Causes	1926	1927	1928	1929	1930	1931	1932
Stillbirths	1676	1715	1672	1585	1547	1526	1431
Premature Births	809	940	954	917	942	825	791
Total Live Births	43,936	44,857	43,390	40,668	41,614	39,325	38.803
Gastro-Intestinal							
Peritonitis	1	—	—	—	—	—	—
T. B. of Intestines	1	2	—	1	3	1	
Diarrhea. Enteritis	867	737	609	680	860	650	584
Diseases Due to Intestinal Parasites	—	—	—	1	—	—	
Intestinal Obstruction	16	19	17	19	—	—	
Dysentery	—	1	1	1	—	—	
Ulcer of Stomach	1	—	—	—	—	—	
Appendicitis	—	1	—	1	1	—	
Ulcer of Duodenum	1	—	1	—	—	—	
Other diseases of stomach	—	1	—	—	—	—	
Cirrhosis of liver	—	1	—	—	—	—	
Biliary Calculi	—	1	—	—	—	1	
Disease of Oesophagus	2	—	—	—	—	—	
	889	763	628	703	864	652	
Respiratory							
Diseases of Larynx	—	1	—	—	1	—	
Bronchitis	24	12	5	7	10	7	
Broncho-Pneumonia	403	262	297	333	287	250	
Lobar-Pneumonia	—	—	—	—	50	58	
Unclassified Pneumonia	50	44	52	39	63	49	
Congestion of Lungs	2	5	—	—	2	4	
Pulmonary Emphysema	—	—	—	—	3	—	
Other respiratory diseases	—	—	—	—	1	1	
Diseases of Pharynx	6	3	5	4	—	—	
Asthma	1	1	—	—	—	—	
	486	328	359	383	417	369	
Communicable Diseases							
Typhoid Fever	1	—	1	1	2	2	
Smallpox	—	—	3	—	1	—	
Measles	62	24	17	11	10	7	
Scarlet Fever	8	4	5	2	3	1	
Whooping Cough	140	177	32	114	109	77	
Diphtheria	27	19	20	13	8	15	
Influenza	92	52	130	187	60	86	
Poliomyelitis	4	4	5	3	3	4	
Cerebro-spinal	2	1	—	—	2	3	
Meningitis Meningococcus	2	1	—	5	32	28	
Erysipelas	13	13	15	17	11	22	
T. B. Meningitis	10	8	12	9	8	10	
Syphilis	32	56	50	44	63	38	
Gonorrhoeal Infection	—	1	—	—	2	—	
Other infectious Diseases	2	3	3	1	2	1	
T. B. Vert. Column	—	—	1	—	—	1	
T. B. Other Organs	1	—	—	1	—	1	
Meningitis Simple	40	30	21	18	—	—	
Lethargic Encephelitis	—	—	1	1	—	—	
Tuberculosis - Lungs	6	5	3	5	—	2	
Mumps	2	1	—	—	—	—	
T. B. Disseminated	1	—	—	—	—	—	
Acute Rheumatic Fever	1	—	—	—	—	—	
	446	399	319	432	316	298	
All Other Causes							
Tetanus	—	1	—	2	1	—	
Purulent Infection	7	7	3	4	7	6	
Cancer of Digestive Tract	—	—	—	—	1	1	
Cancer	2	—	—	1	—	—	
Non-Malignant Tumors	—	—	—	—	2	1	
Scurvy	—	1	—	1	1	—	1

	1926	1927	1928	1929	1930	1931	1932
Rickets	5	6	8	9	6	5	9
Diseased Thymus	7	9	12	16	5	7	4
Diseased Adrenals	—	—	—	—	1	—	
Other general diseases	13	19	12	3	5	1	
Hemorrhagic Conditions	2	1	—	—	2	1	6
Non-Epidemic Encephelitis	4	5	1	3	6	6	
Epilepsy	—	—	1	—	1	—	
Convulsions	40	42	35	24	14	11	32
Other diseases of nervous system	1	2	1	1	1	—	
Diseases of organs of hearing	6	15	13	10	16	18	
Diseases of lymphatic system	1	—	—	—	3	1	
Diseases of Mouth	1	1	2	1	4	3	
Hernia	1	2	3	3	12	17	
Acute Nephritis	3	1	3	1	1	7	
Acute Abscess	2	3	1	3	2	1	
Other diseases of skin	—	—	—	4	1	1	
Congenital malformations	249	258	276	240	260	278	237
Congenital Debility	330	116	96	89	73	211	211
Injury at birth	115	125	145	152	170	123	143
Other diseases of early infancy	74	81	69	67	139	117	92
Infanticide	6	6	3	1	3	3	
Accidental poisoning	1	2	2	2	3	—	
Conflagration	2	2	1	1	3	2	
Accidental burns	2	4	2	5	3	4	
Accidental mechanical suffocation	79	62	67	57	63	47	
Accidental drowning	2	2	—	1	1	—	
Accidental Trauma	1	—	2	1	5	3	
Sunstroke	—	—	—	—	2	—	
Sudden death	—	—	—	—	1	—	
Unknown	—	1	2	3	13	9	
Railroad and auto	1	—	1	1	—	—	
Auto only	1	5	2	2	—	—	
Other diseases, organs of locomotion	—	—	—	1	—	2	
Mycosis	2	—	2	2	—	1	
Diabetes mellitus	—	—	1	1	—	—	
Anemia	—	1	—	1	—	—	
Leukemia, Hodgkins disease	—	2	2	1	—	1	
Other diseases of heart	—	—	1	1	—	—	
Other diseases of kidneys	—	1	1	1	—	—	
Lack of care	5	15	10	1	—	—	
Poisoning by food	—	—	—	1	—	1	
Starvation	—	—	—	2	—	—	—
Other external violence	—	—	—	2	—	1	
Pericarditis	—	—	2	—	—	1	
Endocarditis & Myocarditis	—	—	3	—	—	—	
Diseases of bones	—	—	1	—	—	—	
Absorption poison gas	—	—	1	—	—	—	
Excessive cold	—	—	1	—	—	—	
Other external violence	—	—	1	—	—	—	
Embolism	1	—	—	—	—	—	
Furuncle	1	—	—	—	—	—	
	967	798	789	722	831	891	
GRAND TOTALS	3,597	3,228	3,049	3,157	3,370	3,035	2,912
DEATHS UNDER 1 YR. PER 1,000 LIVE BIRTHS	81.8	71.9	70.2	77.6	80.9	77.2	75.0

No mechanism exists for securing data on the etiology or incidence of morbidity of either the fetus, infant or mother in this state. The above tables, therefore, show only the mortality.

We feel that attention should be called to a few points in the above tables. It is to be noted that there has been a steady decline of live births from 45,240 in 1925, to 38,803 in 1932. This has been continuous except that 1927 showed 921 more live births than 1926, but from then on the drop has been more or less uniform. It is to be noted too, that there has been a reported increase in maternal mortality from abortion, with and without sepsis, since 1925, when 13 such deaths were reported, to 42 in 1932. It is interesting to note that the maternal death rate per 1000 live births for 1932 is the lowest (5.1) of any year from 1925.

When we study the statistics relating to stillbirths and premature births, a point of

striking interest is noted. It is found that the ratio of these to the live births, through the years 1926-1932, maintains a marked uniformity. In 1926 the ratio was 1 to 17.67; in 1932 it was 1 to 17.46. It must be more than a coincidence that this ratio remains so uniform. In the opinion of the committee the etiology of these accidents during the course of the pregnancy could have been determined in many instances, and proper therapeutic measures instituted to have prevented them.

A study of these surveys and the statistics made available to us leads to certain conclusions:—

First—The laity do not appreciate the importance of obstetrics. It has never been brought to them that prenatal care has to do with providing the unborn child with standard equipment, physical and mental, with which to meet life. They do not realize that in many instances mental defectiveness and physical defectiveness could have been prevented by proper prenatal care. Many inmates of institutions for mental defectives are there because of sub-standard equipment; many inmates of corrective and penal institutions are there for the same reason. Nor do the members of the laity realize the importance to the mothers themselves of proper prenatal care. Subsequent invalidism and postnatal maternal surgery might, in many instances, have been avoided had a careful and complete examination been made at the very beginning of pregnancy, and followed up with repeated frequent observations by the engaged physician, who should have taken advantage of these visits to instruct these expectant mothers as to deit, hygiene and so on.

Second—There are approximately seventeen hundred physicians in the state. The General Committee estimates, roughly, that probably thirty percent do no obstetric practice. Sub-Committees I and II, sent many hundred questionnaires, and only a scant fifty-odd were interested enough to return them. This means that these men were the ones doing this type of work, who even had this much interest in it. These evidently were from the men who are at least trying to do good obstetrics. The question in the mind of your Committee is, what type and class of service is provided by the remainder of the medical profession of the state who engage in giving obstetric care. One concludes that physicians themselves, as a whole, are not interested in the subject of obstetrics. They do not make the effort or spend the time, money and study necessary to become as efficient in this as in other branches of surgery, and obstetrics is major surgery of the highest type, with an attendant double responsibility because of the possible double mortality. There seems to be a determined effort on the part of a majority of the profession not to give prenatal or postnatal care, unless it is reparative surgery for injuries following previous confinements. Not only this, but a determination also to belittle the efforts of those physicians who do appreciate the importance of these efforts, and who are preaching and practicing prenatal and postnatal care.

The Committee suggests that, as a result of this Conference, a determined effort be made to educate the laity through talks before various clubs (for men as well as women), to show the importance of obstetric care. The great value of and need for prenatal care. Teach them to demand a type of obstetric service of the same skill and ability that they do of their appendectomist, tonsillectomist or salpingectomist, and pay him accordingly. That this should be given thought to is evidenced by the introduction into the legislature of a bill, the provisions of which limited the maximum fee for a confinement case to Fifteen ($15.00) Dollars.

In closing may your Committee venture to offer the suggestion that the members of the medical profession preach better obstetrics, and then be prepared to practice what they preach.

IDIOPATHIC PNEUMOTHORAX*

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By the term idiopathic pneumothorax is understood an intrapleural collection of air, spontaneously produced, and due to no definitely recognized cause. This disease has been called by various other names, such as spontaneous non-tuberculous pneumothorax, pneumothorax in the apparently healty, accidental pneumothorax, etc.

Etiology.—The question of the etiology of this type of pneumothorax has been the subject of much discussion. There are those who have gone so far as to say that all such cases are due to tuberculosis, recent or remote. It is well known that spontaneous pneumothorax is a frequent and usually serious complication of pulmonary tuberculosis. But it is not with this group of provable tuberculous pneumothoraces that this paper will deal, nor yet with those cases traceable to some other pulmonary or pleural disease such as abscess or empyema, but with the group whose etiology cannot be proved. It is this group that is called idiopathic.

Some of the histories give no apparent immediate cause, the pneumothorax comes on, perhaps, when the patient is in the best of health, and at a time when he is not performing any strenuous activity. As an example, patients have developed pneumothorax while asleep in bed. In many of the cases, however, some proximate cause can be found. The pneumothorax develops as the individual is doing some strenuous work, such as swimming or gymnastics, or as he greatly increases his intrathoracic pressure by violent coughing or vomiting.

But one must admit the presence of some sort of preceding disease in the lung or pleura, in order that the accident of pneumothorax may be possible. One can hardly conceive of this accident happening to an absolutely normal lung save as the result of puncture. It is probable that the pneumothorax occurs as the result of rupture of a sub-pleural bleb [1, 2] located usually in the apex, but also to be found elsewhere on the lung surface, particularly at the lobe margins. Kjaergaard[2] has demonstrated by x-ray in one case of idiopathic pneumothorax the presence of a bleb on the pleura. This was detectable because the bleb was large. As to the cause of these blebs one can only speculate. Apical blebs are to be seen in lungs at post-mortem, and some of these, no doubt, are caused by the healed apical tuberculosis that can so often be demonstrated in otherwise normal lungs. Rupture of such a bleb, then, might be blamed remotely on tuberculosis. Microscopical examinations have been made in a few typical cases of idiopathic pneumothorax that came to autopsy, and the sections taken from bullous lesions in the apical pleura have shown no evidence of tuberculosis. [2] Blebs on the lung surface are frequently found in chronic pulmonary emphysema. But only a very few of the reported cases of idiopathic pneumothorax have occurred in patients with emphysema. In considering etiology one must also concede the possibility of pleural adhesions being capable of producing gradual stretching of the pleura by the slow contraction of scar tissue, and so producing a weakened area on the adjacent surface. Such old pleural adhesions need not be due to tuberculosis. Again, in conjunction with acute non-tuberculous pleurisy one must admit the possibility of the disease producing perforation of the pleura during the period of acute inflammation.

One of the calamities of artificial pneumothorax is the readiness with which the pleural surfaces will adhere if, by too long an interval between refills, the air becomes completely absorbed. Resumption of the desired

*Read before the W. Va. State Medical Association at Charleston. June 22, 1933.

pneumothorax becomes impossible. The fact that 20% of the cases of idiopathic pneumothorax have recurrent attacks [2] suggests that the collapse is not due to any inflammatory cause, tuberculous or otherwise, which would be so apt to produce adhesions strong enough to prevent recurrence. These recurrences, furthermore, are usually after an interval of months, a long enough time having elapsed to allow firm adhesions to form.

The problem of etiology, then, in most cases is a matter for conjecture. Few of these cases die as a result of their pneumothorax, and in those that have come to autopsy it has not often been possible to demonstrate a cause. It is safe to say however, that these cases are not due to *active* tuberculosis, since all evidence, clinical, laboratory and x-ray, goes to rule out that possibility. Some cases have been under observation for many years after their pneumothorax, never showing any pulmonary abnormality on examination or x-ray.

Statistical.—Idiopathic pneumothorax is said to be rare. Kjaergaard[2] has collected 200 cases that have been reported since 1856, and his monograph contains a very complete discussion of the subject with a presentation of sixty-one cases that have come under his observation. In this country several short series of three to five cases, and numerous isolated cases have been reported. An old series of 918 cases of pneumothorax of all sorts reported in Vienna many years ago included 14 cases in which the cause was not found.

Bilateral idiopathic pneumothorax has been reported, but is not common. The bilateral cases are usually alternating, more rarely simultaneous. Repeated attacks in the same individual have often been reported, two attacks being not uncommon, while some have had as many as 14 fully authenticated attacks. It is estimated that twenty percent of cases have recurrences. [2] Persistence of the pneumothorax has been noted, with duration as long as ten to fourteen years, without any re-expansion of the lung. In one case the duration was estimated as at least twenty years.

Diagnosis.—The diagnosis of idiopathic pneumothorax is one of varying difficulty. In many instances the history alone is sufficient to suggest the diagnosis, the sudden onset of shortness of breath and chest pain in a perfectly healthy person is enough to arouse suspicion. The extent of the pneumothorax may, however, be slight, and the onset of symptoms from it be obscured by other things. In such instances the diagnosis may be more difficult.

The chief symptoms experienced are: (1) Shortness of breath, which may approach suffocation. (2) Pain in the chest, sometimes very severe. (3) A sense of pressure on the chest, or constriction. (4) Cough, usually unproductive.

The severity of symptoms depends, in part, upon the rapidity with which the air collects in the pleural space. If the development of the pneumothorax is quite slow the symptoms may not be severe enough to make the patient incapable of working, and sometimes weeks may elapse before he seeks relief. Characteristically, however, the compression takes place rapidly, pain may be very severe, and shortness of breath may make any activity impossible. Some of the reported cases were stricken so suddenly and seriously that it was thought that they were about to die. Probably, then, idiopathic pneumothorax is sometimes a cause of sudden death.

The shortness of breath produced by the pneumothorax is due to the mechanical effect of the collection of air, and the severity of the shortness of breath will depend upon the size of the collection and the quickness with which it occurs. Cyanosis can often be noticed in addition to the shortness of breath. Why do these phenomena occur even in cases in which only a small amount of air is present, and in which no great amount of pulmonary compression is evidenced by the x-ray. The widespread use of pneumothorax in the treatment of pulmonary tuberculosis needs no comment, and it is well known that patients can have a complete collapse of one lung without production of actual dyspnea and without cyanosis. In such cases the compression is brought

about very slowly, often a large part of the lung is already out of commission as far as respiration is concerned, and the mediastinum is ordinarily so fixed that marked reduction of the patient's normal ventilating surface does not take place. The reason for the appearance of dyspnea and cyanosis in even a small idiopathic pneumothorax is that these individuals have lungs that are normal. They have no adhesions that will limit compression of lung tissue, their mediastinums are not fixed by tuberculous processes in the hilum. In these cases a certain amount of compression occurs in the good lung as well—this is evidenced by the mediastinal shift, and also, more accurately, by the result of bilateral intrapleural pressure studies. These have been carried out experimentally by Graham[3]. and for the further elucidation of this question might safely be carried out on individuals suffering from the disease.

As to the physical findings which one meets with in this condition, they are, of course, those of pneumothorax, and there is no disturbance in the chest which can produce more widely varying physical findings. The only positive proof of the presence or absence of air in the pleural cavity is the x-ray, or the needle. Physical findings in pneumothorax may be many and striking. Increased size of the chest on the affected side, inter-spaces widened or even bulging, limitation of movement, fixation or inward movement of the costal margin, displacement of the heart and trachea, absence of tactile fremitus, hyperresonant to tympanitic percussion note, absent breath sounds or breath sounds of amphoric quality, tinkling rales, and also the coin sound. These findings are associated with pneumothorax it is true, but pneumothorax may be present though most of these signs cannot be elicited. A valuable sign, and one of which little mention is made is that described by Hamman[7]. The lower border of pulmonary resonance is estimated during full expiration. Where pneumothorax is present this level of resonance will be lower on the affected side. If the quantity of air in a pneumothorax is small, one can hardly expect many of the classical physical signs to be obtainable, and the x-ray, or the needle, may be the only way by which the diagnosis is properly made.

Reference to several standard authors and systems reveals some disagreement in regard to physical findings. One cannot expect that the physical findings over a small pneumothorax in which the air is at less than atmospheric pressure will compare with the findings over a large pneumothorax under positive pressure. It is necessary for writers to recognize that all shades of variation are possible, and only then will a rational presentation of the varying physical findings be made.

Treatment.—The therapeutics of this condition are few and simple, and suggest themselves from the nature of the disease. (1) Rest, if necessary in bed, until the air is absorbed. (2) Aspiration if dyspnea is excessive, some cases have required the use of continuous suction. (3) Symptomatic remedies for the relief of pain or cough.

Inasmuch as the condition is frequently recurrent the question arises as to what might be done to prevent further attacks. Efforts at such prevention have not often been made. Watson and Robertson[4] at the suggestion of Dr. W. B. Porter introduced 300 cc of patient's blood into the right pleural cavity of a patient who had suffered six collapses of the right lung and one of the left. The patient was placed in various positions thus allowing the blood to reach all surfaces of the pleura. The lung apparently adhered after re-expansion, as, a year later, no further collapses of the right lung had occurred, but three more of the left. The use of some irritating chemical had also been considered, but was not used for fear of the solution reaching the lung and producing some undesirable reaction. Willy Meyer in commenting on the above procedure mentioned the use, in Europe of .5% silver nitrate solution in a few cases, with success. Hypertonic glucose solution in small amounts has also been used though with doubtful success [2].

The use of blowing exercises is contraindicated, the effect of these being only to re-

tard closure of the pleural fistula. Observations on such exercises have been made with the fluoroscope, and show that in closed pneumothorax they tend to compress the collapsed lung and to produce mediastinal shift to the healthy side [5] These effects are the reverse of those produced in a pneumothorax that has an external communication through the chest wall. That blowing exercises are valueless in the treatment of this condition is attested by Sheppe[6].

Prognosis.—The prognosis of idiopathic pneumothorax is good. Kjaergaard[2] reports six fatalities in his 200 collected cases, and no fatalities in the 51 individuals (with 61 attacks) who had come under his observation. In 49 of these on whom data were complete only one has died of tuberculosis, and the disease developed three years later than the pneumothorax, and in the opposite lung. In four of the cases reported here recovery was completely uneventful, and all are quite well at intervals of 30, 20, 15, and 6 months after onset. The fifth case is very recent. In 1925, the writer admitted a case through the accident ward at Lakeside Hospital, Cleveland. The patient was extremely dyspneic and died within a few hours. Autopsy showed a pneumothorax of undetermined cause. Dr. A. R. Moritz of the Pathological Institute, Western Reserve University, after recently reviewing the pathological report, stated that the findings were compatible with the diagnosis of idiopathic pneumothorax.

The rate of recovery is dependent upon the extent of the pneumothorax, and the size of the pleural opening. Even cases with a wide open broncho-pleural fistula have eventually completely recovered. Perhaps more important is the possibility of coexistent heart or lung disease. A sudden large pneumothorax is quite an embarrassment to the circulation, and might easily prove fatal if it occurred in a person who already had heart disease. Or if it occurred in a person who had a low vital capacity due, for example, to chronic emphysema; it might be enough to cause death. But as the majority of these individuals are in the earlier decades of life they present no such complicating diseases and so their prognosis is good. In view of the fairly frequent recurrence of idiopathic pneumothorax, however, it would be well for the patient to be cautioned that the disturbance may again appear.

Report of Cases.—(1) S. E. G., male, white, aet. 18. Patient suffered an attack of acute appendicitis on 12-5-30 and appendectomy was performed the same day. The operation and the enesthetic were uneventful. Past history and physical examination were negative save for the acute appendicitis. The day following operation cough developed, and there was pain in the left chest. No shortness of breath was noted. On 12-9-30 examination showed slight cyanosis, movement of the lower chest was limited because of wide abdominal binder, there was dullness, diminished fremitus, and diminished breath sounds at the left base. Diagnosis of a small pleural effusion was made, which was thought to be due to an embolus. Thoracentesis performed later that day yielded no fluid. The following day examination showed much the same findings. Coin test was tried, and was negative. A few tinkling rales were heard over a small area of the chest, and this raised the suspicion of pneumothorax. X-ray showed a small collection of air at the left base partly compressing the lower lobe. It was later learned that the thoracentesis had actually yielded air, which was drawn back into the syringe, this had been thought due to a leak around the needle at the nozzle of the syringe. Progress was uneventful, and before discharge from hospital the lung had reexpanded. Since that time the patient has completed 1½ years of college and has taken part in varsity boxing. The principal point of interest in connection with this case is the fact that this pneumothorax is a post-operative complication, to my knowledge the only one that has been reported.

(2) H. P., white, male, aet. 32. While swimming 8-2-31 patient was seized with sudden shortness of breath, and with difficulty reached shore. After resting a while he went in swimming again but suffered in varying

degrees from shortness of breath, and sense of pressure and constriction of the chest. That evening patient took various remedies for indigestion without relief, "thought it was gas on the stomach." There was a moderate amount of pain on moving the right shoulder. Examination showed restriction of motion on the right side of the chest with the area of resonance in expiration lower in level on the right side than on the left. Percussion note was not tympanitic nor hyper-resonant. Breath sounds over right lung were diminished in intensity, with tubular breath sounds in some areas. Diagnosis of pneumothorax was made, the patient advised to rest as much as possible, and the chest was strapped. Two days later temperature was still normal, there was no dyspnea and only occasional pain. Fluoroscopy on this day showed clearly the pneumothorax partially compressing the lung from apex to base. On 8-13-31 examination confirmed by fluoroscopy showed only an apical collection of air. Patient then left for two weeks' vacation at the seashore, returned in perfect health, and has remained so ever since. The interest in connection with this case is that the patient at no time went to bed because of his illness, but merely restricted his physical activity.

(3) H. C., white, male, aet. 20. On 2-16-32 while doing gymnastics was seized with severe attack of cough lasting five minutes. Pain in the chest occurred only with the cough, and was of a sharp stabbing nature. Shortness of breath developed rather gradually and on his way home patient noted he was very short of breath. On reaching home he went to bed and remained there with occasional attacks of cough and pain. He was comfortable only in the recumbent position, sitting up made him very short of breath. Examination showed marked cyanosis of lips. The chest on the right was larger and immobile. Tactile fremitus was absent, percussion note tympanitic. Breath sounds were absent. The coin sound was positive. There was a displacement of the heart to the left. The patient was kept in bed for two weeks under observation. There was no fever and after a period of increased respiration and pulse rate which lasted for two days the pulse and respirations were normal. X-rays taken a few days after onset, showed a large pneumothorax completely compressing the right lung with displacement of the heart to the left. On discharge there was little evidence of re-expansion, and examination a month after onset still showed a large amount of air. Expansion was slow and the definite date of re-expansion not noted, but by the end of April at the latest the air was all gone. Tuberculin 1 milligram intradermal gave a negative reaction. Activity was limited all spring but in the summer patient resumed ordinary activity and is at present attending school in the best of health.

(4) F. F., white, male, aet. 21. On 12-9-32 while walking, experienced sudden pain in left chest with shortness of breath. Patient returned home and went to bed. Moderate pain in the chest continued, and he was unable to lie on the left side because of shortness of breath. There was occasional unproductive cough. Examination showed no cyanosis. The chest was of normal contours, symmetrical in appearance and movement Tactile fremitus on the left was diminished, percussion note hyper-resonant, and there was marked reduction in cardiac dullness though no displacement was noted. Breath sounds over the left lung were much diminished in intensity but not altered in pitch, and there were no rales. No coin sound was obtained. Three days later x-ray showed a partial pneumothorax on the left, producing compression of the entire lung with slight displacement of the mediastinum. Tuberculin .01 mg intradermal gave a positive reaction. Temperature, pulse and respiration were normal throughout the period of observation. After ten days he was discharged to go home though there was still evidence of the pneumothorax. No further observations have been made in this case but he is reported by his friends as being in good health.

(5) Through the courtesy of Dr. G. R. Maxwell, Morgantown, W. Va., I am able to

report a fifth case which I had the privilege of examining on 5-17-33, six days after onset.

The patient L., white, male, painter, aet. 40, was seized with sudden chest pain and shortness of breath while stooping to pick up his morning paper.

He sat down to get his breath, and then went in to apply heat to the right chest, thinking he had indigestion. He experienced no relief, and a few hours later went to see Dr. Maxwell. Curiously enough he was more comfortable while walking than when at rest. After examination Dr. Maxwell made the diagnosis of idiopathic pneumothorax. X-rays made on May 17, 1933, showed a complete collapse of the right lung, with some mediastinal shift and a normal left lung. On first examination no cyanosis was noted, temperature was normal, there was some increase in the pulse rate, and, while at rest, no evidence of shortness of breath. The patient was put at rest for a few days and returned to work on the fifth day, experiencing no discomfort from his activity. During the latter part of his first day of illness occasional unproductive cough appeared and some pain in the right neck.

Examination 5-17-33 showed no cyanosis and no discomfort. The chest was symmetrical and in movement showed only questionable slight lagging of the right costal margin. Fremitus was only slightly diminished, not absent. Percussion showed increased resonance on the right side, not marked, with a lower border of resonance at the right base on expiration. There was displacement of the heart to the left. Breath sounds were practically absent on the right save over the upper third where the sounds were distant, low-pitched and of a cog-wheel character. There were no rales. Coin sound was negative.

This case is a perfectly typical one, and there is every expectation that its outcome will be favorable.

Summary.—Four of these cases of pneumothorax were discovered in the student body at West Virginia University in the short time of two years. It seems obvious that this disease entity is by no means as rare as has been supposed. The chest symptoms that the first of these patients experienced were so slight that one could easily believe that many similar cases occur and are never diagnosed, for the simple reason that they are never seen by a physician. The brief duration of symptoms in some cases, due to rapid reabsorption, make it difficult for the patient to feel that anything very serious has happened. Careful physical examination is necessary of course, but the x-ray examination is of chief importance. If it can be established that the disturbance is not due to tuberculosis the patient will then be spared the time consuming, expensive and unnecessary regime that tuberculous disease involves. No doubt the passage of a few more years will find idiopathic pneumothorax fully established as a disease entity.

Conclusions.—(1) Five cases of idiopathic pneumothorax are described.

(2) This disease should be considered non-tuberculous, judged by the benign clinical course, and by the available pathological and x-ray evidence.

(I wish to express my thanks to Drs. S. J. Morris and W. B. Madera for their aid in the x-ray diagnosis of these cases and to Dr. G. R. Maxwell for the opportunity of examining and reporting case No. 5).

Discussion:

G. F. Evans, Hopemont: Spontaneous pneumothorax, whether idiopathic in origin, or due to a definite etiology, has proven to be a more common affliction, since the widespread use of the Röentgen Ray. It may occur with practically no symptoms or signs, or it may be heralded in with profound shock. In analyzing large series of cases of spontaneous pneumothorax, it has been found that most of them are due to tuberculosis or other apparent pulmonary pathology. The percentage of true idiopathic cases, instances where a definite etiologic factor is not found, is low and their origin is still open to conjecture. Some of these cases are probably the result of old tuberculous conditions, which have since healed. The residual of the infection, the pleural adhesions, under stress, has caused the pleural tear to occur. Many cases of pneumothorax occur in children and in infants where the possibilities of tuberculosis are negative. A differential point of some value is the fact that most tuber-

culous pneumothoraces are followed by effusions and empyema, necessitating aspirations. In the idiopathic type effusions are rare.

It is quite probable that some of the cases, particularly those of the recurrent or bilateral type, may be explained on a basis of bronchial anomalies. In this connection, Weiner reports an infant who developed pneumothorax at the age of five weeks. There were frequent remissions and relapses until death occurred at five months.

Autopsy findings showed a patent bronchus, the calibre of a lead pencil, extending from the root of the lung to the periphery and ending in an invagination of the pleura, which previously had been shielded by a few webs of pleura. This condition may occur more frequently than has been thought.

R. D. Roller, Charleston: I have two cases which I would like to add to Dr. Whittlesey's. One was a man 31 years of age. Up to 1926 he had been in perfect health. At that time, he suddenly had a pneumothorax on his left side. He was treated by his family physician as though he had tuberculosis, with some freedom and some effort on his part to do his own work for about a year and a half. At the end of that time he went back to work as assistant superintendent of mines. Six months after this he had a second attack from which he recovered. Two years after this he had a pneumothorax on his right side coming out of a clear sky. He took care of himself for about two weeks. This was in 1928. Today he is working hard. Saturday he came in for a re-check and x-ray of his lungs. There was no evidence of tuberculosis. As Dr. Evans says, he might still have it but he has never been treated for it.

The second case was reported in the West Virginia Medical Journal. The patient was a woman who had hyperemesis gravidarum. While vomiting she developed a severe pain and dyspnoea caused by pneumothorax of the right side. The mediastinum was dislocated to the left and the diaphragm pushed down with the liver almost to the crest of the ilium. Attempts were made to save the baby and to relieve the pneumothorax by aspiration but unfortunately we could not stop the vomiting and although the air would clear up partially she would have another attack of vomiting causing a re-opening of the wound in the pleura and she would have another massive collection of air. We found it necessary at about two months to resort to a therapeutic abortion. She immediately began to get well and about six months after that she had gained sixty pounds in weight and was in perfect health. As she stopped seeing doctors I do not know more about the care taken of her.

Last fall, two years afterwards, she came in, pregnant again, and wanted to know if her lungs were all right. They were and she was ultimately delivered of twins normally and without trouble.

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HEART DISEASE

Heart disease presents an increasing challenge. In certain directions mankind has made no progress in the conquest of this disease. Troublous times, wars, revolutions, misery, crime and mad haste are even greater than they were three hundred years ago. It is not known for a certainty how far bad habits are responsible for the increase of heart disease, if increase there is. Dr. Paul D. White discusses this challenge in an article appearing in the Octboer *Hygeia.*

Three hundred years ago science was still deep in the dark ages so far as the heart was concerned; heart disease in man was almost wholly unrecognized. In the last three hundred years the greatest advance made in the study of heart disease has been in the field of recognition, or diagnosis. Treatment is now being given, and prevention has only begun.

Two hundred years ago men started to connect certain things like shortness of breath and sudden death with diseases of the heart.

One hundred years ago much progress had been made, but doubtless more than half of all cases of heart disease were unrecognized or incorrectly diagnosed.

The last decade of the nineteenth century brought forth three discoveries helpful to the diagnosis of heart disease. They include (1) the x-rays, (2) an instrument to measure blood pressure and (3) the delicate string galvanometer by means of which the electrical activity of the heart muscle may be recorded accurately and hidden defects often of great importance may be discovered.

At the present time it is a rare case of important heart disease that escapes diagnosis if it is carefully studied.

CARBON MONOXIDE POISONING*

By M. H. MAXWELL, M. D.,
Keyser, W. Va.

CARBON monoxide, as a menace to life and health, has come into prominence with the use of natural and artificial gas as a fuel in the home and in industry, and more particularly with the development of the internal combustion engine. The number of victims is apparently increasing due to the more extensive use of fuel materials under forced combustion and to carelessness and ignorance on the part of those who have to deal with it. The public generally seems to know little and care less of the dangers from this source. A small leak at a joint in a gas line or about a valve; the fumes given off from an open stove that is not connected to a flue, and even the exhaust from an automobile are treated lightly because they are not particularly irritating and the amount inhaled seems to be so small. But the housewife, with only a small leak into the home, is in danger; and the man who allows a smoke ring to be painted on the inside of his garage door either does not know the danger or is willing to take a long chance with his life.

Carbon monoxide is the most widely distributed of all present day poisons, being found in natural and artificial gas and wherever organic matter, such as oil, gas, coal or vegetable matter is burned, the amount given off depending partly upon the matter consumed but chiefly upon the conditions under which oxidation takes place. It is found in large quantities around founderies, in the smoke from furnaces that are improperly ventilated and in the exhaust from automobile engines. Fortuntaely carbon monoxide is usually mixed with other gases that are more or less irritating to the mucous membranes so that the eyes and respiratory tract will not tolerate them very long or in a very concentrated form.

Carbon monoxide is a tasteless, odorless, invisible, non-irritating gas, slightly heavier than atmospheric air, and is the product of incomplete oxidation of organic matter. Complete oxidation of carbonaceous materials produces CO^2 which is not poisonous, but if oxidation is not allowed to go on until the carbon is saturated, CO is formed which is highly poisonous.

The combustion point for CO is higher than that of other inflammable gases with which it is commonly mixed so that it reaches the outer part of the flame largely unconsumed and if the flame is chilled a large part of it escapes without being burned. The explosion in the engine of an automobile quickly burns the more rapidly inflammable part of the gasoline, the more slowly burning CO is chilled and is given off in the exhaust, of which it forms about 7%. The open gas stove, in common use in this section, is a prolific source of CO and unless connected with a flue is a source of real danger. The ordinary water heater gives off more CO than the open stove in proportion to the amount of gas used because when the flame reaches the coil it is chilled and the remaining CO is given off unconsumed.

When we consider the small amount of CO it takes to cause illness and death our respect for it mounts rapidly. Cecil, in his text book on medicine, gives the following figures: If the concentration of CO in the inhaled air is 2 or 3 parts in 10,000 it may cause death in from 5 to 6 hours. If it be 7 to 10 parts in 10,000, death is apt to occur in from 60 to 90 minutes. If there be as much as 20 to 30 parts in 10,000, death may take place in 30 to 45 minutes, and if the proportion be 50 to 100 parts in 10,000,—that is ½% to 1%,—death is apt to occur in from 2 to 5 minutes. If the volume of breathing be increased by exercise the rate of absorption is correspond-

*Read at the June meeting of the G., H., H. M. County Medical Society at Keyser, W. Va.

ingly increased and saturation is reached in a proportionately shorter time. From these figures we can readily understand how a man, having started his engine in a closed garage, and then deciding to do a little tinkering, might be so affected that he would be unable to reach the open air before becoming unconscious. Such cases are only too common. Even out of doors, in congested city traffic, the danger from CO is recognized.

The affinity of CO for hemaglobin is about 300 times greater than that of oxygen. This combination, called carbonic-oxide hemaglobin, is a fairly stable one and for this reason the exposure to even a small amount over a long period leads to an accumulation of the poison in the blood and tissues accounting for the cases of chronic CO poisoning. The effect of the poison is largely due to the loss in capacity of the blood to carry oxygen, but there is also an enormous increase in nitrogenous metabolism with muscular degeneration said to be surpassed only by phosphorus poisoning.

CO gives to the blood a bright red color which shows through the mucous membranes and in the skin belying a real anæmia that usually accompanies or follows the poisoning. The hemaglobin estimation is high due to the cherry-red color of the carbonic-oxide hemaglobin, and the red cell count not infrequently ranges from 5,000,000 to 7,000,000 or more per c.m.m. In about 70% of the cases the urine contains a reducing substance, sometimes sugar and in others has been reported as glycuronic acid. Albumen is also occasionally found in the urine.

Post mortem findings consist chiefly of pneumonic changes in the lungs and fatty degeneration in the heart, liver and kidneys. Ecchymoses in the brain and meninges are not uncommon. Frequently, in the chronic cases, there is found a peculiar white deposit of undetermined character just under the cortex of the brain. This is known as the white line and probably has something to do with the nervous and mental changes so frequently observed in the long-standing cases.

Cases of CO poisoning may be roughly divided into the acute and chronic, depending upon whether a large quantity has been inhaled quickly or whether the poison has been accumulating over a longer period. The symptoms of the acute cases are due, almost entirely, to the anoxemia or loss of oxygen from the blood while in the chronic cases there is added the degenerative processes throughout the body.

The symptoms caused by rapid inhalation are headache, vertigo, dyspnea, palpitation, and a feeling of exhaustion. Added to these in the more severe cases are cramps in the muscles, pain in the stomach, blurring of the vision, nausea and often vomiting, general muscular weakness, loss of consciousness and death. These symptoms vary according to the amount and rapidity with which the gas has been absorbed. To inhale a small quantity slowly may cause only headache, vertigo and a sense of weakness, while to inhale a large amount quickly may cause vertigo, muscular weakness and loss of consciousness so quickly that it is impossible for the victim to escape to a source of fresh air. To be rendered unconscious, even though being in the gas for only a short time, is a serious matter. Death may come quickly, or the patient may be resuscitated only to die suddenly after two or three days, and when death does not occur these patients are left physically and mentally impaired for weeks, months or years. Death in these cases, is due to respiratory failure.

When the gas is less concentrated and is inhaled over a longer time; that is, for days or weeks, the symptoms come on more slowly and increase gradually in severity and are practically the same as those accompanying a secondary anæmia. These patients have headache, tire quickly, complain of chilliness, some vertigo, palpitation and shortness of breath on exertion, dreams and ringing in the ears. In spite of the symptoms of anæmia their color is good, the hemaglobin estimation is high and the red cell count is usually above normal. This combination of symptoms and signs should arouse suspicion, and calls for a very careful history as to exposure to CO.

The chronic form, or late manifestations, presents a quite different picture because the

symptoms of anoxemia are largely overshadowed by those of the degenerative changes particularly of the nervous system. These late cases are apt to be wrongly diagnosed or go unrecognized unless we bear in mind this condition when studying those patients who look full blooded and strong and are yet unable to work.

Three general types of chronic poisoning are recognized. The ordinary, the pernicious anæmia, and the thyro-toxic types.

Symptoms come on gradually and the effects of the poisoning are usually well established before the patients present themselves for treatment.

In the ordinary type the symptoms are much the same as in the mild acute cases except that they have existed over a much longer period. The headache becomes a daily occurrence, and the frontal headache is replaced or overshadowed by the typical CO headache at the base and back of the skull for the relief of which the head is drawn back and down as far as possible. At first the pulse is normal but later is full and rapid. The skin is flushed. The respiration is increased, later becoming irregular. Other symptoms consist of disturbed gait, tremor, twitching of bundles of muscle fibers, contractions of muscles causing cramps especially in the legs and toes, pain in the stomach, heaviness in the chest, metallic taste, shivering, thirst, a craving for sugar, loss of the sense of smell, nervous and emotional instability, paresthesias and marked slowing of the mental processes, neurasthenia, psychasthenia, and a hypertonicity of involuntary muscles causing spasms of the oesophagus and ureters, renal colic and enterospasm.

In the pernicuous anæmia type, to the symptoms of anæmia are added glossitis, absence of HCl in the gastric juice, a low hemaglobin and red cell count; but the blood picture is different and a careful history shows the true cause of trouble.

In the thyro-toxic type there may be tremor, hot flashes, perspiring hands, hyperactive reflexes, dilated pupils, positive von Græfes', protruding eye balls, widened lid slits and disturbance of the automatic nervous system, but to offset these there is a slow pulse and low B. M. R.

The diagnosis of acute CO poisoning is easy for the cause is apparent. The chronic cases may be mistaken for primary or secondary anæmia, encephalitis or other forms of nervous disorders, or exhaustion from other causes unless the possibility of exposure to the gas is carefully brought out,—and the expoure may date back a number of years.

Prognosis in the mild cases is good, recovery being prompt after the cause is removed. In the more severe cases recovery is slower. The life of the normal red blood cell is from 20 to 30 days but the CO bearing cells are rapidly destroyed in the liver and an anæmia of greater or less severity follows. Those exposed over a long time, and in whom extensive degenerative changes have taken place do not tend to improvement.

The summary of a few of the cases which have come under my observation will illustrate the various points of interest.

Two men were working with a gang plow drawn by a tractor. There was some trouble with one of the plows that required adjusting occasionally, which was done with the motor running and the exhaust blowing into their faces. After several exposures of several minutes each in 2 or 3 hours both became suddenly sick. One staggered and fell but did not lose consciousness. He was taken to his home and kept in bed for the remainder of the day. He was weak and nervous for a few days but quickly recovered. The other man was apparently not so badly affected and was taken to his home. Several hours later he walked to my office because he did not feel very well. While there he became too weak to stand, nervous, trembly, nauseated and a severe headache developed. I took him home and put him to bed. He became very short of breath, his heart became irregular and he complained of severe pain in his stomach. He was very restless and weak and I feared that he would die. It was a week before he was able to be out of bed, and it took him more than a month to recover.

Miss D. worked in a large office room where people were constantly coming and going. About mid-summer she came to my office saying she thought she needed more iron as she felt very much as she did when I had given her iron for simple anæmia. She had a good color and her hemaglobin was well above 80%. Her red cell count was above 5,000,000 and I became suspicious of gas poisoning. When questioned about exposure to gas she denied the possibility both in the home and office. The man at her office assured her that there was no leak. When she came again I insisted that she be sure. She returned to the office and found that where a gas appliance had been removed the cap had not been put on tight and the leak would support a flame about two inches high. She went on her vacation about this time and after two weeks came back in good shape.

Mrs. K. whom I was treating for another condition came in at one of her regular visits complaining that she was very much worse. She had an intense headache every day, was weak and nervous, short of breath, had palpitation of the heart and horrible dreams. Her hemaglobin was 68% and the red cell count 5,240,000. She acknowledged that there was a small leak at her kitchen stove which she had recently purchased, but not enough to amount to anything. I went to investigate and found, in a small kitchen, quite a large leak at one of the valves to the stove. It was with difficulty that I could convince her that this was the cause of her trouble. The leak was stopped and it took her about two months to recover.

The next two cases were not so fortunate.

E. R., age 38, was reared on a farm. Was always robust and strong. Left the farm at 18 and worked in a novelty store for four years. He then went to Pittsburgh where he has since lived. At his work as traveling salesman he used a car in which the odor of the exhaust was always noticeable. There was a leak in the gas furnace in his home and he smoked 8 to 10 cigars a day. Frequently, often several times a day while driving, he would get a headache and become so sleepy and dizzy that he would have to stop and get out into the open air. His health gradually failed and his condition was such that he had to give us his work 20 months before I saw him. After being treated by his physician for a time he went to an internist who told him that he found nothing wrong but a slight ptosis of the colon and apparently an old scar in the stomach as of an ulcer that had healed.

He complained of indigestion with a feeling of fullness and gas in his stomach. His appetite was fair and he took a laxative every day. His movements and speech were slow and seemed to require considerable effort. His gait was unsteady and there was an almost entire lack of initiative. He had no physical discomfort except in his stomach, and his symptoms were general muscular weakness, indigestion, constipation, loss of sexual desire, disturbed sleep, nervousness, and mental irritability and depression.

On examination there was little to find. His tongue was coated. There was an atrophy of both testicles due to mumps. His prostate was slightly enlarged. The K. K. was hyperactive. The Hgb. was 85%, white cells, 5200; red cells 7,084,000, and the B. M. R., plus 10.

There was no history of previous illness except the childhood diseases, and diphtheria and pneumonia between the ages of 18 and 22. His trouble had developed slowly. There was a very definite history of exposure to CO over a long period. His symptoms were those of muscular and nervous deterioration. His hgb. was fairly high; his red cells were extremely high, and his basal rate normal so I felt safe in making a diagnosis of chronic CO poisoning. He later consulted three neurologists in Pittsburgh and each of them said that his condition was due to sleeping sickness. Two of them claimed to have made their diagnoses when they saw him walk into their offices.

It has been four and a half years since I first saw this man and his condition has not materially changed in that time.

M. J., age 30, came from the southern part of the state complaining of weakness and loss of weight. He had been a plumber for 8

years and admitted that he was very careless with gas in his work. He used an old automobile in which the exhaust would often be so dense that he would have to put his head outside so he could breathe. For three years his strength had been failing. His symptoms consisted of loss of weight and strength, nausea and vomiting, gastric distress and pain in the abdomen, a sense of fullness in the chest, headache, dreams, chilliness, vertigo, ringing in the ears and disturbed sleep.

His color was unusually red. His B. P. was 100-60. There was a slight thickening of the thyroid. His hgb. was 80%; white cells 8000, and red cells 7,640,000. He was so weak and short of breath that he could not walk more than three or four blocks without becoming exhausted. I heard from him about six months later and there had been no improvement in his condition.

In these last two cases, due to the high red cell count, there might have been a suspicion of Polycythemia Vera, but there was no enlargement of the spleen and no engorgement of the blood vessels. Neither was the hgb. nor the red cell count as high as is found in Erythremia where the hgb. is usually from 100 to 150% and the red cell count between 7,000,000 and 11,000,000 per c.m.m.

Treatment.—In the mild cases nothing is required but to get the patient into fresh air. The more severe acute cases need rest and an abundant supply of oxygen. If the patient has lost consciousness, artificial respiration may be necessary; and where the facilities permit a blood transfusion relieves the symptoms quickly and may save the life. Recently it has been found that the intravenous injection of a 1% solution of methylene blue is a specific remedy. This can be obtained from the various drug houses in 50 c. c. ampoules.

For the anæmia the various preparations of iron answer well. In the chronic cases, where the degenerative changes have taken place, there seems to be no remedy to alleviate the condition.

CANCER OF THE BREAST*

By STUART MCGUIRE, M. D.
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WHEN I first began my professional work the majority of patients with breast tumors that came to me were advanced cases of cancer, and the question was simply one of treatment. With the education of the profession and public, the majority of cases of real or supposed disease of the breast that now come to me are not malignant, and the question is largely one of diagnosis. I do not know of any opinion that a surgeon is called on to express which entails greater responsibility than the advice he gives a woman with a border line condition of the breast. If she has chronic cystic mastitis, and an operation is advised, she is subjected to unnecessary suffering and mutilation. If on the other hand she has early cancer, and an operation is not advised, she is denied the only chance of a cure and her life is sacrificed.

There is a group of breast cases in which it is impossible to make a positive diagnosis between benign and malignant disease. In these cases there is an almost irresistible temptation to put off reaching a decision and to tell the patient to come back for further examinations. I confess to having yielded to this weakness, but I have always had reason to regret it. I have not found it easier to reach a decision after two or three examinations than I would have done in the first instance, and the patient has been made to suffer psychically and physically by the delay.

If the growth is cancer there is the danger of dissemination of malignant cells by the massage of frequent examinations. It is safer to excise a doubtful tumor at once rather than

*Read before the Kanawha Medical Society, Charleston, April 11, 1933.

submit it to repeated manipulations by the patient, doctor or consultant.

A surgeon of experience can usually separate cases into two classes, first, those which are obviously not malignant and second, those which are possibly or probably malignant. Practically this is all that is necessary for him to do in order to give intelligent advice. If the case is plainly not malignant, but the symptoms due to chronic cystic mastitis, intercostal neuralgia or a phobia, the result of cancer propaganda or the death of a friend from the disease, the patient should be told she has no serious trouble and does not need an operation. If on the other hand, owing to the presence of a tumor, the case is possibly or probably malignant, the patient should be urged to have the growth removed and examined in order that an early radical operation may be done if it is found to be malignant.

Every surgeon knows from experience that his pre-operative diagnosis of a breast tumor often proves to be wrong. Growths which he believed to be benign proved malignant, and those he thought malignant prove benign. He can therefore truthfully tell the patient he does not know what the result of the biopsy will be. Driven by the fear of cancer on the one hand and encouraged by the hope the disease may prove benign on the other, the woman will usually consent to an exploratory incision with the understanding that it is to be followed by a radical operation if found necessary.

When a patient consults a surgeon for a supposed disease of the breast the plan to be pursued is as follows: First, ascertain her history and symptoms; second, make a physical examination of her breasts by inspection, palpation and transillumination; and third, if surgery is indicated have the usual study of her general condition made to ascertain the safety of the operation.

The patient's history and symptoms can usually be secured more quickly and the facts in more logical sequence, by a series of questions than can be done by listening to her often discursive narrative. How old are you? Are you married or single? If married how many children? Did you have an abscess or other trouble with your breast while nursing any of your babies? What about your menstrual functions? Do your breasts get tense, tender or painful at the time of your monthly period? Do you recall any injury to your breast? How did you discover the lump in your breast? Was it by accident or were you looking for trouble? Did you have any pain before you found the lump? Do you have any pain or tenderness now? Has the lump increased in size? Do you have any discharge from the nipple? Finally comes the question of the history of cancer in other members of her family. I know that the Society for the Control of Cancer desires to emphasize two facts—one that cancer is not contagious, the other that it is not hereditary. I agree to the first but I am not so sure of the second. Common observation makes it obvious that cancer runs in families, and if the patient in question has had several near relatives to die of the disease that fact must be one of the factors in making a diagnosis in the case.

The history and symptoms having been secured, the patient is turned over to a nurse who strips her to the waist and so drapes her with a sheet that she can be examined in either the erect or recumbent position.

Inspection notes the size and contour of the breasts, whether they are on the same level and if they move equally with corresponding motions of the arms. The nipples are inspected to see whether one or both are retracted and if there is any discharge, eczema or other irritation.

Palpation should be made with the flat hand pressing the breast against the chest wall. Do not pick up the breast at the periphery as this will give a false impression of a tumor mass. Palpate the whole breast, the opposite breast and the axillary spaces as well. A patient in endeavoring to locate a lump for the surgeon will often sit up on the table saying she cannot find it when lying down. This indicates the necessity of palpating the breast not only in the recumbent but also in the erect position.

Transillumination is a comparatively new method of examining the breast and in some cases gives valuable information. It is analagous to the light test used in diagnosing diseases of the sinuses and tumors of the scrotum. It is carried out in a dark room by placing a small electric lamp beneath the breast and noting the shadows or opacities that may be seen in the tissues. This method is especially applicable in large and pendulous breasts.

There are many pathological conditions which may be responsible for lumps in the breasts. The three most common are fibro-adenoma, chronic cystic mastitis and carcinoma.

A fibro-adenoma is a smooth, globular, freely movable tumor. It is a benign and painless growth, but every tumor of the breast should be removed, as there is always the possibility of an error in the diagnosis and there is danger of malignancy developing later from the irritation of its presence. The submammary incision suggested by Warren is especially desirable in these cases.

Chronic cystic mastitis may involve a limited area of the breast, the whole breast or both breasts. It often causes pain which is worse at the menstrual period. The term "mastitis" is unfortunate as the disease is not inflammatory or neoplastic, but is probably an involution change in which fibrous tissue and retention cysts are formed. Chronic cystic mastitis may result in a single cyst, the so-called "blue domed cyst" or in a number of small hard cysts, the "shotty breast", or in a number of larger cysts, the "lumpy breast." A blue domed cyst should be excised for the same reason a benign adenoma should be removed, but "shotty" or "lumpy" breasts should not be operated on except in cases where there is doubt as to the nature of the disease. The treatment of painful chronic cystic mastitis is trying and unsatisfactory, but mutilating surgery is rarely justifiable.

Cancer of the breast in its advanced stage presents an unmistakable picture, but very early cancer gives only the signs of a benign tumor. At first it is a simple lump, movable, painless and apparently innocent. Slowly it sinks its claws in the flesh of its victim and becomes more or less fixed. Extension through the lymphatics causes adhesion or dimpling of the skin, retraction of the nipple and enlargement of the lymph nodes of the axilla. Lucky the patient who discovers the disease early, and wise the surgeon who advises an exploratory operation without waiting until a positive diagnosis can be made. Theoretically there is a time when all cases of cancer of the breast can be cured. Practically there comes a time when none of them can be helped.

The prognosis in cancer of the breast depends on a number of factors:

First: The age of the patient. Cancer is much more likely to recur in a young patient with active lymphatics than in an elderly patient. Cancer is a hopeless disease when it attacks a pregnant or lactating woman. Paradoxical as it may sound, an old woman with cancer has a longer expectancy of life than a young woman.

Second: The type of cancer. There are said to be fifty-four varieties of cancer, and some pathologists have attempted to divide them into four groups. There is no doubt certain cancers are more virulent than others. The scirrhus type is of slower growth and less likely to recur than the encephaloid type. Cancer originating in the upper outer quadrant of the breast is more fatal than those beginning elsewhere.

Third: The time of operation. Early operations done before there is demonstrable involvement of the axillary glands give much better final results than late operations. When the axillary glands are enlarged but movable, there is still a chance of cure. They may be septic and not malignant. When the axillary glands are enlarged and fixed or when the supraclavicular glands are involved the case is hopeless. Sometimes it is justifiable to do a palliative operation on these patients to relieve local symptoms, but these operations usually shorten life.

Fourth: The completeness of the operation. Other things being equal, the result of

an operation for cancer depends on the completeness with which the disease is removed. It is needless to say a competent surgeon will get a higher percentage of cures than an incompetent one.

Fifth: Certain unknown factors such as the resistance of the patient. All surgeons have occasionally done a comparatively incomplete operation on what seemed to be a hopeless case and had the patient recover and stay well. Again he has done a complete and satisfactory operation on an early and favorable case and had a rapid recurrence and speedy death. The only explanation of the above results is to attribute them to resistance, immunity, susceptibility, or other conditions designated by terms which we employ to cloak our ignorance.

Often in cancer of the breast a radical operation can be undertaken without hesitation on the clinical symptoms alone. Again a radical operation is not justifiable without exploring the suspicious lump. If the mass is small it had better be completely removed together with some of the surrounding tissue. If it is large it should be incised and a specimen cut from the substance of the growth. It has long been thought that incision into a malignant tumor is a very dangerous procedure, but animal experimentation has shown that this fear is unfounded, especially if the exploration of the growth is followed promptly by the amputation of the organ in which it is located. Frequently after removing a specimen a surgeon can make a positive diagnosis of cancer by the gross appearance of the tissue. It is always advisable, however, to have the pathologist make a microscopic examination by the frozen section method which only takes from five to seven minutes to complete.

The radical operation for cancer of the breast consists in the removal of the breast, the underlying pectoral muscles and the axillary fat and lymph nodes in one connected piece. I have given up the butterfly skin incision advocated by Jackson, Rodman and others and gone back to the elliptical incision. I do not remove as wide an area of skin as recommended by Halstead, as it is unnecessary in early cases and useless in late ones, consequently I do not have to use skin grafts.

After the operation is completed, two large marine sponges which have been immersed in bichloride solution are wrung as dry as possible and placed over the dressings. These are bound tightly to the chest wall so that by their resiliency a gentle uniform pressure is exerted which holds the surfaces of the wound together and minimizes the danger of bleeding.

The arm of the affected side is not confined but is left free, and the patient is encouraged to use it. This prevents the soreness, stiffness and swelling from which patients formerly suffered when the arm was included in the bandages.

I do not have my breast patients treated with x-ray before operation because of the delay it would entail, the nausea and weakness it might cause and the possibility of dermatitis which would interfere with healing. I do have them given intensive series of x-ray treatments after the operation whenever it is practical to do so. I know that statistics prepared by reliable men show that there is apparently little or no difference in the final results in patients who are given post-operative x-ray treatment and those who are not so treated. But if it does no good it does no harm, and the omission of the treatment in some cases might subject the surgeon to criticism. I think I have certainly seen good results follow x-ray treatment of inoperable cases of cancer. If it is beneficial after recurrence why not before? To secure the best results from x-ray treatment the patient must have the benefit not only of an adequate apparatus but also of a competent operator.

The final results of operations for cancer of the breast are unquestionably much better today than they were a generation ago. This is not due to an improvement in technique, but to the fact the surgeon gets his cases earlier. I do not believe we will ever be able to do a more radical or complete operation than the one developed by Halstead and his coworkers. If we are not able to improve the

operation, then our only recourse is to try to improve the type of the patient on which the operation is performed.

If the laity can be educated with reference to cancer as it has been with reference to appendicitis, and if patients will seek relief promptly at the first suspicious symptoms, then the mortality of the disease can be cut in half.

Today if a woman develops cancer, she enters the hospital with the greatest secrecy and confides in the surgeon under the seal of professional confidence. If she is operated on and cured no one ever knows the nature of her trouble. If she is operated on and there is a recurrence, she dies at home after a long illness, the character of which eventually becomes widely known.

The reason cancer is considered a disgrace is because of the belief in its tendencies to develop in succeeding generations. The reason cancer is considered hopeless is because the cures are concealed and failures revealed. The remedy consists in education.

AN UNUSUAL CASE OF PNEUMOCONIOSIS

By GEO. F. GRISINGER, M. D., T. R. BOLING, M. D., BERT BRADFORD, B. S.
Rutherford Sanitarium, Beckley, W. Va.

J. B. a white, man, aged 45 was admitted to the Rutherford Sanitarium on June 1st, 1933, complaining of shortness of breath, cough and expectoration of about nine months duration. The family history and history of tuberculosis contact were negative.

Past history disclosed pneumonia and typhoid in childhood. His occupation was construction foreman at the time he stopped work. For the last eighteen years patient had worked at grading roads, in rock quarries, laying concrete streets and side walks. Two years ago he was construction foreman in drilling through white stone, type of rock unknown. This work lasted one year. He stated that the dust was very dense in this tunnel and when they came out at night their clothes were covered with fine white sand. In drilling they used no water or masks. He further stated that the members worked in this construction were all in poor health at this time. For the next nine or ten months following this work he was occupied improving roads and doing patch work on the streets.

Present Illness.—This started nine months before admission to the hospital. At the onset he was taken with a bad cold, severe coughing and some expectoration. This gradually grew worse and the patient started to lose weight. One month later patient entered a hospital and remained two weeks. There they diagnosed his trouble as bronchitis, and made an autogenous vaccine from his sputum. This was given him which caused a severe reaction. Since then patient had remained in bed, having night sweats, but no elevation of temperature. At the onset of the trouble he expectorated profusely, but at the time of admission it was much less.

Physical Examination.—Patient was well developed, but somewhat emaciated. He was lying on his right side and was very dyspneic, pausing between each word to catch his breath. The scalp was negative. Eyes: There was a complete cloudiness of the right lens with adhesions to the iris. Nose: The nasal mucosa was inflamed. Teeth were in poor hygienic condition. The posterior pharynx was markedly injected. Neck: There was no glandular adenopathy, but some abnormal venous pulsations were noticeable. Chest: Symmetrical, but expansion was limited bilaterally and there was practically no expansion in the lower half of both lungs. With each inspiration the intercostal spaces were drawn in forcibly in the lower two-thirds of the chest. The chest was of the obstructive emphysematous type. Over the lower part of the left lung there was hyperresonance; the entire chest was fairly resonant throughout. On auscultation there were scattered areas of fine crepitant rales at the

apices, as the base was approached they became louder and more confluent. In the lower half of the left lung the character of the rales changed, they were more atelectatic in character and on expiration there was an expiratory wheeze. The breath sounds on both sides were broncho-vesicular down to the second interspace, but below this point they were clearly bronchial. The heart was somewhat hypertrophied and the muscular tone was weak. The valvular sounds were hardly audible. Blood pressure was systolic 110 and diastolic 70. Abdomen, genitalia and extremities were normal. On admission the temperature was 98.

Laboratory Findings.—The urine showed a trace of albumen, an occasional pus cell and many hyaline casts. The blood examination revealed an erythrocyte count of 5,190,000, hemoglobin 100% (Dare) Leucocytes 8,150, differential count; polynuclears 79%, small lymphocytes 20%, large lymphocytes 1%. The blood sedimentation rate showed a fairly rapid fall of the erythrocytes. Sputum examination was negative for tubercle bacilli.

X-ray Report.—The lower half of each lung shows dense consolidation with exception of the costophrenic angles which show some evidence of air. The density is not quite so heavy at the lung periphery as around the hilum. Numerous tubercles can be seen in the upper half of both lungs with fairly clear apices. This patient seems to have very little breathing space due to the dense consolidation. Röentgenological diagnosis: Dense pulmonary fibrosis, probably pneumoconiosis.

The patient gradually became more dyspneic and on the third day after admission his temperature went to 99, pulse 100, respiration 40. The temperature gradually rose when on the 12th day just before he died, it was 103 and respiration was 60.

Autopsy Findings.—At autopsy the lungs were retracted from the chest wall. The heart was markedly enlarged. Macroscopically the lungs were hard and dense and showed almost complete consolidation throughout, and the pleura was adherent to the chest wall in many places. Some crepitation was elicited in the apices but this was very limited. The consolidation was symmetrical in both lungs. The left lung weighed 1200 grams and the right lung 1350.

Pathologists Report.—Tissue study revealed: Nodular often peribronchial and perivascular as well as diffuse fibrous tissue overgrowth is present in all the sections. Proliferating frequently collagenizing connective tissue extends interstitially along the alveolar septa producing marked thickening of the alveolar walls and frequent alveolar collapse. In areas of broad or diffuse scars and granulation tissue, semblance of lung tissue is lost. These areas usually show diffuse infiltration of lymphocytes and macrophages and many of the latter are laden with black amorphous

Roentgenogram shows dense bilateral fibrosis.

and granular pigment, also similar extracellular pigment as well as broad irregular crystalloid particles and elongated spicules are present. Collapsed alveoli are lined with large swollen epithelium frequently showing dissociation and desquamation. There are numerous dilated air sacs and bronchi, many of which contain abundant granular and amorphous acidophile debris as well as degenerated epithelium and pigmented macrophages. Multinucleated foreign body type

giant cells are infrequently seen in alveoli and in areas of granulation. Throughout the sections, including the less fibrosed lung, the septa are thickened and infiltrated with macrophages and the alveoli are more or less filled with desquamated epithelial cells, pigmented and non-pigmented macrophages, and fibrin-serum coagulum. The pigment here may be either brown granular (blood pigment) or may be as fine and coarse black granules. The contents of many alveoli and bronchi are necrotic. Especially the larger bronchi and blood vessels show peribronchial and perivascular thickening and anthracotic scarring. Many vessels show intimal and medial hypertrophy and one large vein is almost occluded by eccentric granulating endophlebitis. The thickened granulating pleura together with an underlying broad zone of black pigmented lung tissue shows dense fibrosis, vascularity, and dilated sometimes occluded lymphatics, and is densely infiltrated with lymphocytic infiltration of the wall.

The ash content was determined by grinding samples of lung and placing them in an oven at 100 C where they remained until they maintained a constant weight. This was then heated in an electric furnace until all organic material was destroyed. The residue was weighed and calculated as the total ash. The total ash was then treated with hydrochloric acid and the insoluble portion filtered off and weighed. The residue was acid insoluble ash. In order to assay the insoluble ash it was treated with hydrofluoric acid, and this gave us our silica content which was 50.5%. The total ash content was 2.08%.

Discussion.—This is an interesting case from the viewpoint of its apparent sudden onset, and the dense pulmonary fibrosis. Unlike the average case of silicosis, which over a long period of time presents symptoms of impending pulmonary trouble before the condition becomes actually manifest, this case gives a history of good health with no symptoms pointing to the chest until nine months prior to the time patient was admitted. This beginning lilness was attributed to an acute cold. The question that arises in our mind is: What were the defensive forces that held in check the developments of symptoms pointing to pulmonary trouble in a case with such a massive dose of silica dust as the unusually dense fibrosis and silica content of the lungs would indicate. It seems almost incredible that a person with such extensive and dense fibrosis and a pulmonary silica content of more than 50% could go for 15 months after exposure wtihout some indication of pulmonary disturbance.

COMMITTEE'S WORK IN FOOD DEPARTMENT

"When I first noticed in an advertisement the seal, 'Accepted, American Medical Association, Committee on Foods,' I wondered just what it meant, for I surmised that it might mean a great deal to me personally," comments Doris W. McCray in an article introducing a new department, "A Housewife Looks at the Committee on Foods," which will bring to *Hygeia* readers the work of the Comittee on Foods. Mrs. McCray continues:

"When a recognized scientific organization of the magnitude of the American Medical Association is concerning itself with my problems and making it possible for me to know what foods are good for my family, I want to derive every advantage from their work.

The Seal of Acceptance on a food article assures the purchaser of the following facts:

"*(a)* That the food article, its label, all related published or displayed advertising copy of any nature, statement of physical and chemical composition, process of manufacture, and other pertinent required information, have been submitted to the Committee for its consideration.

"*(b)* That all 'health' or nutrition claims—either specific or by inference, appearing on package label, in any advertising copy, or published or displayed in any other form—harmonize and are in accord with the evidence submitted as to the chemical and biologic values of the finished product on the market.

"*(c)* That evidence has been submitted that the food product is neither adulterated nor misbranded under the terms and provisions of the federal Food and Drugs Act and other federal food statutes.

"*(d)* That claims, other than those of a 'health' or nutritional nature, offered in the manner mentioned under *(b)* are not self evidently or grossly exaggerated, false, misleading or deceptive."

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

A symposium on silicosis contributed by a group of distinguished clinicians and research workers occupied a prominent place on the program of the annual meeting of the National Tuberculosis Association held in Toronto, June 27-30, 1933. Extracts of the papers, which will be published elsewhere later, are here presented.

SILICOSIS AND TUBERCULOSIS

A. J. Lanza, specialist in industrial medicine, stated that while it is impossible to estimate accurately the prevalence of silicosis in the general population, studies among employees of trades with a silicotic dust hazard show a high tuberculosis mortality among them. Much of this excess in the tuberculosis death rate may be ascribed to silicosis. In a few instances the prevalence of silicosis has been carefully estimated, but the rates so obtained cannot be applied generally because industrial conditions vary so widely. However, it is apparent that silicosis is a widespread industrial hazard, is probably on the increase, and affects to an appreciable extent the death rate among industrial workers exposed.

Professor S. Lyle Cummins of Wales, Adviser to the (British) Tuberculosis Research Committee, which recently issued an epochal report on tuberculosis among South African natives engaged in gold mining, stated that there are serious lacunæ in our knowledge about dust diseases. "Silicosis" is a state of bilateral lung and lymph-node fibrosis, for the most part nodular in type, resulting from the inhalation and the retention in the lung of the dust of hard stone; the particles being in such fine division as to enter the pulmonary alveoli and ultimately the lung tissue where they set up characteristic changes and determine an increased liability to pulmonary tuberculosis. We know, too, from the animal experiments of reliable investigators, that free silica introduced into the tissues, either in its crystalline form or as a soluton, sets up inflammatory processes leading on to fibrosis; and that its presence acts as an adjuvant to the local multiplication of tubercle bacilli.

In South Wales coal miners suffer with a condition corresponding to the silicosis of metalliferous miners, but which does not apparently predispose to fatal lung tuberculosis. These observations question the criteria on which the diagnosis of silicosis is usually made. Studies among gold miners in South Africa provide much accurate information. The dust inhaled by miners on the Rand contains other elements than free silica. Some of the elements of these complex dusts may be adjuvants to the action of free silica and others may tend to neutralize it. We need, said Dr. Cummins, a scientific "recessional" in which to reexamine with an open mind many of the generalizations now accepted as current coin in relation to silicosis and "miners" phthisis.

Pulmonary tuberculosis so readily complicates simple silicosis, said A. R. Riddell of Toronto, that silicotic fibrosis rarely reaches advanced stages without its occurrence. Simple silicosis seldom occasions conscious disability unless the fibrosis is advanced.

Clinical signs in silicosis are those common to fibrosing lung conditions and therefore not characteristic except that they generally occur throughout the chest and are not confined to circumscribed areas. A lessening of the breath sounds or blanketing together with a shortening of the inspiratory phase, which is at the same time raised in pitch, has diagnostic value. X-ray shadows, when considered in conjuction with a clear history of exposure, are diagnostic.

The teaching that tuberculosis arising among those in silica trades is not infectious cannot be universally entertained. The author has found as great an amount of infection among the wives and children of tuberculous silicotics as among those in contact with ordinary tuberculosis.

Leroy U. Gardiner of Saranac presented a picture of the pathological sequence following inhalation of silica dust. Autopsy material in this country is rare, but this lack is compensated to some degree by the fact that silicotic conditions can be reproduced in experimental animals.

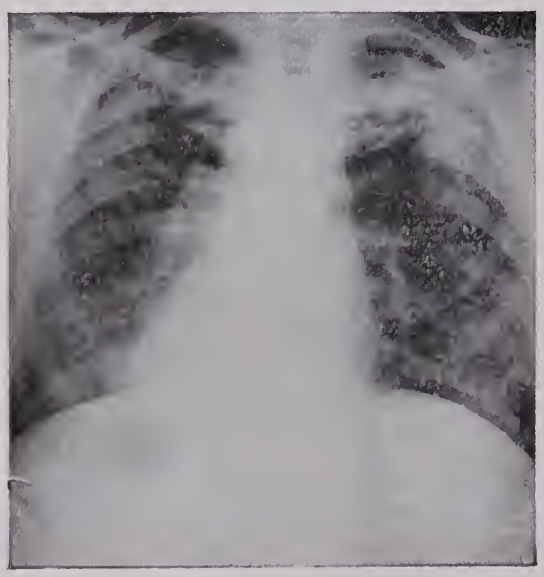
The first reaction to inhaled silica is non-specific and is probably the same for any type of dust. It consists of accumulations of phagocytes in the subpleural air spaces accompanied by a slight thickening of their walls. By x-ray this may be visualized as a slight diffuse haze beneath the pleura in the mid-portions of the lungs.

Phagocytes carry the silica to lymphoid tissue within the lung and the mediastinum where nodules of fibrous tissue develop which compress the

lymphatic vessels and interfere with the flow of lymph. Pragocytes pass through the walls of the lymphatics and excite fibrosis in the areolar tissue about them. In the röentgenogram the thickened vascular trunks, beaded by minute nodules of specific reaction, are now clearly discernable. Nodules in the tracheobronchial nodes enlarge these structures and widen the mediastinal shadow.

When lymphatic obstruction is advanced phagocytes carry dust immediately into all parts of the pulmonary frame-work with the formation of a diffuse fibrosis and multiple nodules in the walls of the terminal air spaces. The röentgenogram discloses great numbers of discrete nodules uniformly scattered throughout the lung, which are easily visible because surrounded by compensatory emphysema.

Acute silicosis is said to developed in response to excessive concentrations of exceedingly fine dust. Sections of all those seen by the author have been complicated by tuberculosis but the simple form may occur.



Second degree silicosis with tuberculosis. Hilum shadows obscure. Dense mottling in both lungs. Some cloudiness at both apices, particularly at right.

When tuberculosis complicates silicosis it may arise from a pre-existing latent infection or from a new one acquired during occupational life. It becomes more common as the amount of silicosis increases. The combination of the two conditions constitutes a new disease entity which is characterized by lesions different from those which either irritant produces alone. In the presence of tuberculosis the silicotic nodule increases in size and its borders become ill-defined and irregular. Its center may caseate but often it does not. Tubercle bacilli are rare or abesnt. Conglomerations of nodules imbedded in a matrix of dense pigmented leather-like scar tissue are common in the mid lungs and are frequently bilateral. Foci of caseation or even cavities may occur within such areas. Such changes are demonstrable both by röentgenogram and postmortem sections. The cause of the susceptibility of the silicotic lung to tuberculosis remains to be demonstrated although various experimental data have shed some light upon the character of the process.

Willis S. Lemon and George M. Higgins of Rochester, Minnesota described the development of the pulmonary silicotic nodule in the experimental animal. The amount and the situation of lymphatic tissue determine not only the site but the physical characteristics of the developing lesions. They become massive and conglomerate in the progressively smaller and more discrete as the sizes of the bronchi decrease. Lesions of variable size occur in the subpleural regions.

Henry K. Pancoast and Eugene P. Pendergrass of Philadelphia described the röentgenological aspects of this subject. The röentgen examination is the most exact means of determining the presence of silicosis, the degree of progression and the differential diagnosis.

POLIOMYELITIS VICTIMS

A submarine of the U. S. Navy sank not so many years ago, carrying more than two score of men to a watery grave. The major cause for immediate salvage being thus sadly removed, there remained the possibility of recovering the undamaged mechanical element of the boat.

"It is not difficult to draw a parallel and to conceive of the victims of poliomyelitis as that same submarine, with certain functions impaired in varying degrees," writes Frederick Bradman in the October issue of *Hygeia,* the Health Magazine.

The salvage crew in this instance are the orthopedic doctros and technicians. The orthopedic surgeon's use of muscle training and reeducation, surgical procedures and the highly beneficial exercises give the highest degree of effectiveness to the salvaged elements of the newly reconstructed physical make-up. Old bodies are made new through a slow but thorough process.

PRESIDENT'S PAGE

The appalling number of injuries and deaths resulting from automobile accidents is a matter of common knowledge. One factor which increases the hazards of the road at the present time is the fact that for economic reasons, thousands of motorists continue to operate their old cars which are undependable and unsafe. Another element of danger is presented by the greatly increased speed of the new models. Even the cheapest light cars are capable of making 75 to 80 miles per hour.

When a physician is called to attend the victims of an automobile accident, he feels morally obligated to respond promptly, but at the same time he realizes that as a rule this class of work is unsatisfactory. In the first place he usually finds that other physicians have also been called and frequently there is embarrassment in deciding which one shall take charge of the case. Having rendered first aid, the physician may find that professional courtesy requires him to relinquish the case in favor of the family doctor. Making such a change is certainly a disappointment to the physician who has dropped his work for the emergency call, and frequently he finds it difficult to collect an adequate fee for the service he has rendered.

As a matter of fact the medical and hospital care of automobile accident cases is not profitable business for either physicians or hospitals. It is true that many financially responsible people meet with such accidents and that personal liability insurance affords adequate protection in a considerable number of cases. On the other hand a large number of serious accidents are the result of recklessness on the part of irresponsible drivers who haven't enough money to purchase insurance after they have paid for their license tags.

It is obvious that there should be strict legal regulation of the driving privilege. Compulsory automobile insurance was initiated by the State of Massachusetts in 1927. Undoubtedly there is merit in this plan, but it has not worked out quite as well as its sponsors hoped. Perhaps the fact that all cars are known to be insured encourages recklessness in certain types of drivers. Furthermore, the cost of insurance is increased on account of the greater number of claims, many of which are speculative, exaggerated or collusive.

In our opinion the most practical plan so far suggested for handling this automobile accident problem is embodied in the "Safety-Responsibility Bill" sponsored by the American Automobile Association. This bill, parts of which have been incorporated in the laws of more than a dozen states, requires insurance or other security for payment of damages, after conviction of any of certain serious offenses against public safety. It stipulates that all driving rights shall be suspended for failure to pay promptly judgments for damages up to certain fixed amounts. The bill further provides that insurance is required upon conviction of operating motor vehicles under the influence of intoxicating liquor, of operating a motor vehicle without license, of operating an unregistered motor vehicle, or of reckless driving resulting in injury to property, although no injury to person results.

In contrast to the compulsory insurance plan the Safety-Responsibility bill not only offers some prospect of accident reduction, but also operates to deprive certain reckless and irresponsible drivers of their driving privileges. As physicians we have a humanitarian interest in any plan which will contribute to the safety of the public. We also have a personal interest in any plan which will tend to insure a greater degree of financial responsibility on the part of those who are so unfortunate as to be injured in automobile accidents. When, and if, the Safety-Responsibility bill is introduced in our State Legislature, it should receive the hearty endorsement of the members of our Association.

D. A. MacGregor
President.

THE WEST VIRGINIA MEDICAL JOURNAL

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NEXT YEAR'S PROGRAM

The Association Committee on Scientific Work, headed by Dr. R. J. Wilkinson of Huntington, will hold its first meeting early in October. At this meeting a tentative outline of the program for the 1934 Convention at Huntington will be made up, and many of the prospective essayists selected.

In view of the coming meeting of his committee, Dr. Wilkinson has requested the JOURNAL to announce that program suggestions from members of the Association will be welcome. Doctors who desire to present essays before the 1934 session, or who have special subjects in which they are interested, are urged to get in touch with the Committee at once. Such communications may be sent either to Dr. R. J. Wilkinson, First Huntington National Bank Building, Huntington, or to the West Virginia State Medical Association, Post Office Box 787, Charleston.

THE PENITENTIARY PROBLEM

Newspaper editors as well as public officials of West Virginia are greatly concerned about the shutdown of prison factories at Moundsville. The federal statute which forbids the shipment of prison-made goods from one state to another was, of course, directed against government competition. The men who pushed this bill through congress felt that private manufacturers could not honestly compete against prison-made goods. Even by the purchase of the cheapest raw materials and by cutting wages to the bone, private manufacturers could still not meet the low price on prison-made products.

Unquestionably the shutdown of the prison factories at Moundsville will shortly create a most disturbing problem. Unless some method is worked out to keep the inmates busy, the state will not only lose large sums of money but the problem of unrest among idle prisoners will at times take on alarming proportions. The eventual solution of this problem is awaited with keen interest by the taxpayers of West Virginia.

In spite of the seriousness of the present dilemma, we feel somewhat gratified to see the federal government finally taking steps toward cutting down rather than increasing government competition. If the federal and state governments expect to protect and foster private enterprise and collect taxes for that protection, then certainly these governments should strive in every way to avoid the distressing interference of government competition.

Government competition in the fields of medicine and hospitalization is an old, old story. In the nation we have innumerable foundations and funds, vast government hospitals and a veritable army of employees all competing in one way or another against the private physicians and the private hospitals. In the state we have three so-called Emergency hospitals, supported by taxation, competing with and underbidding all other hospitals in their respective vicinities. Yet the doctors and the hospitals, along with all other good citizens and reputable business establishments, must contribute a portion of their earnings to support these needless competitors.

The situation in regard to medicine and hospitalization is almost identical with the industrial competition offered by prison workshops. In the former we have free or cheaper service made possible through taxation. In the latter we have cheaper articles made possible through the absence, or near absence, of wages. In both cases the government is able to underbid and undersell its taxpaying rivals.

We hope the action of Congress in regard

to prison-made goods is the beginning of a "new deal" for all of us who have been bucking government competition for a good many years. Perhaps in the not too distant future a leader will arise to champion the cause of medical practice and consider it as important, or almost as important, as the manufacture of shirts and overalls.

WHAT PRICE CHARITY

Why should medical charity be dispensed on a different basis than other commodities? This question is being asked on every hand. Medical journals of every description cry out in righteous editorial rage at the injustice in the prevailing system of medical charity. They want to know why tax relief funds are used to purchase food and clothing for the poor while medical service must still be contributed free by the doctors of medicine.

There is a great deal of logic in this line of reasoning. Destitute families need three things to keep them alive. The first is food. The second is clothing. The third is medical treatment. All the people, including the doctors, contribute to a common fund through taxation to provide food and clothing. But medical treatment is still saddled onto the doctor and he must make the most of it. It does not seem at all fair.

While the prevailing system does not seem fair, let us not lose our heads over the logic of a good argument. Five years ago, when times were good, we heard little about medical charity. That was because there was little medical charity work to do and it was handled by the medical profession with little trouble and less credit. Today, when we have millions on the roster of unemployed, the problem takes on an entirely different aspect. It becomes a proposition of staggering proportions because the decrease in the number of gainfully employed persons has been in direct proportion to the increase in the number of unemployed. The doctors, therefore, have had less and less pay work and more and more charity work.

Now, at long last, the medical profession is beginning to make itself heard just when we appear to be at the end of the long period of economic stress. In many states, including West Virginia, a schedule of allowances has been adopted for doctors attending charity patients. This fee schedule is approximately one-half the amount generally charged in rural sections. In other words it is better than nothing. At least it is supposed to be.

In some ways we are mildly pleased with this allowance for medical charity, yet we cannot help but feel that the plan is fraught with grave danger to the medical profession. Let us assume that the plan is successful and that it carries over into the next economic cycle of prosperity. To our way of thinking, it will be the nearest step toward state medicine that we have ever made in these United States. When the government starts paying physicians for their services, whether those services are rendered to rich or poor, it seems high time for the doctors to sit up and take notice.

Considering the matter from another angle, let us look at the general plan of medical practice as it has been handed down to us over a period of several hundred years. Under that plan we have charged our patients just about what we thought they were able to pay. The excessively rich have paid thousands of dollars for the same operation that would cost a laboring man less than a hundred. Well-to-do business and office executives have been called on for much higher fees than clerks and carpenters and butchers. This plan, tried out by untold generations of medical men, has been remarkably successful. It has pleased the doctor and has pleased the doctor's patients. It has become so much a part of medical economics that the plan has been recognized time and time again by the courts throughout this country. The doctors have prospered under this plan and, until a few short years ago, they have been glad to follow it.

From October, 1929, until the spring of the present year, the good people of America have been beset with untold troubles. The constant cry for relief has risen from a thousand voices, including the voice of the medical pro-

fession. The doctors asked for some relief from the great burden of medical charity. In making that request, it seems to us that they implied a willingness to throw overboard their time-tried system of charging according to the incomes of their patients. There is only one justification for charging high fees against the rich. That justification is found in the free work that is given to the poor. Once the doctors start collecting for their poor work, there is no longer any justification for the marked difference in the charges. We can't eat our cake and have it too.

The best minds of the country believe that we are now leaving behind us the distressing years of depression and that we are about to enter into another economic cycle of prosperity. If that develops we will then see the ranks of the unemployed dwindle into a negligible factor. Medical charity will shrink to its normal level. When this era of prosperity arrives we hope the medical profession will not be saddled with a new and untried economic scheme. That is why we look askance at this new idea of government pay for medical charity. Now that we have weathered the storm, let us call in our distress signals and save our S.O.S. for a more appropriate occasion.

YOUR CARD FOR THE DIRECTORY

This month an information card is being sent from the headquarters office of the American Medical Association to every physician in the United States and Canada. The information thus secured is to be used in the compiling of the thirteenth edition of the American Medical Directory. The directory is prepared at regular intervals in the Biographic Department of the American Medical Association. The last previous directory appeared in 1931.

This volume is one of the most important contributions of the American Medical Association to the work of the medical profession in the United States. In it, as in no other published directory, may one find dependable data concerning physicians, hospitals, medical organizations and activities. It provides full information concerning medical colleges, specialization in the field of medical practice, memberships in special medical societies, tabulations of medical journals and medical libraries and practically every important fact concerning the medical profession in which any one might possbily be interested. Therefore, those who receive this card should fill it out and return it promptly whether or not any change has occurred in any of the points on which information is requested. Should any reader fail to receive a card before the first of October, he may aid by writing at once to the headquarters office, stating that fact and indicating such changes as he may desire in the information published in the 1931 issue of the directory.

HOSPITAL MEETING

The Hospital Association of West Virginia will hold its eighth annual session at the Stonewall Jackson Hotel, Clarksburg, on Tuesday, October 3, 1933. An excellent program, published elsewhere in this Journal, has been arranged and a large turnout is expected. All members of the West Virginia State Medical Association, interested in hospital work, are cordially invited to attend.

Among the subjects to be discussed at the Clarksburg meeting will be "Hospital Economics," "Coöperation with the N. R. A.," "Hospital Insurance Plans," "Nursing Problems," and "The State Gross Income Tax." Featuring the meeting will be the banquet address of Dr. N. W. Faxon of Rochester, New York, President of the American Hospital Association.

New officers will be elected at the Clarksburg meeting to succeed Dr. A. G. Rutherford, President, Dr. T. K. Oates and Dr. J. R. McClung, Vice Presidents and Mr. Joe W. Savage, Secretary-Treasurer.

COUNTY SOCIETY NEWS

LOGAN COUNTY

The Logan County Medical Society held its regular August meeting on Wednesday evening August 16th at the Hatfield-Lawson Hospital, Logan, with 18 members and visitors present.

Dr. Oscar B. Biern, Huntington, addressed the society on the "A B C's of Electrocardiography," with a demonstration. Dr. Biern brought a portable electrocardiograph machine to the meeting and ran a cardiograph before the members at the meeting. He presented several normal and abnormal tracings, including the one made at the meeting, and explained them in a most understandable manner.

Dr. John H. Steenbergen, also of Huntington, addressed the society on "Diagnosis and Office Treatment of the More Common Gynecology." Dr. Steenbergen's address was very interesting and practical and brought out a number of important things which the physician can do in his office in the treatment of gynecological cases.

The Logan County Medical Society held its regular monthly meeting on Wednesday evening, September 20th, at the Hatfield-Lawson Hospital, Logan, with twenty-one members and visitors in attendance.

Dr. Arthur A. Shawkey, Charleston, presented a paper on "The Hypertonic Infant, An Ever Increasing Problem." Dr. Randolph L. Anderson, also of Charleston, gave an address on "Injuries About the Wrist Joint," illustrated by lantern slides.

Following the scientific program a buffet luncheon was enjoyed through the generosity of the Hatfield-Lawson Hospital.

Fred E. Brammer, *Secretary.*

EASTERN PANHANDLE

Honorable Clarence E. Martin, retiring President of the American Bar Association, was the guest speaker at the annual fall meeting of the Eastern Panhandle Medical Society which was held at the Shenandoah Hotel, Martinsburg, at noon on September 13. Mr. Martin was introduced following a fine duck luncheon and spoke on the subject of crime prevention. His address was most instructive and interesting.

A considerable portion of the meeting, following Mr. Martin's address, was devoted to a discussion of sewer extension in Martinsburg. Dr. T. K. Oates, Dr. A. B. Eagle and Dr. Edwin Cameron were named as a committee to formulate and present to the Martinsburg city council the society's views on the subject.

Dr. M. H. Porterfield, President, presided at the meeting and a number of visiting doctors were in attendance. During the business session, Dr. C. A. Thomas of Martinsburg was elected to membership. The next meeting of the society will be held at Martinsburg in December.

Edwin Cameron, *Secretary.*

KANAWHA SOCIETY

A meeting of the Kanawha Medical Society was held on Tuesday, August 15, in the Public Library Building, Charleston, to perfect the plan which had been formed by the advisory committee for coöperative public health work in Charleston.

Dr. W. Byrd Hunter, Huntington, presented a paper on the subject of "Diphtheria Immunization," considering mainly parental coöperation and methods of obtaining a good percentage of immunized children. Dr. George M. Lyon, Huntington, and Dr. Hugh Robins, then led the general discussion of public health work.

Mr. John B. Hart, executive secretary of Hospital Service, Inc., spoke a few minutes in regard to the work of his organization preceding the adjournment of the society.

M. F. Petersen, *Secretary.*

TRI-COUNTY SOCIETY

One of the most successful and interesting meetings of the Tri-County Medical Society, consisting of physicians from Harrison, Marion and Monongalia counties, was held at the Stonewall Jackson Hotel, Clarksburg, on Friday, September 8, with a large number in attendance.

Dr. H. H. Esker, president of the Harrison County Medical Society, presided, with the local group as host to the visitors from Marion and Monongalia. A dinner was served preceding the addresses.

Dr. Thomas R. Boggs, Baltimore, associate professor of medicine at Johns Hopkins University, and Dr. J. Ross Hunter, Charleston, were the principal

speakers. Dr. Boggs spoke on "Disturbances of the Heart Rhythm From the Standpoint of the General Practitioner." The discussion of this topic was led by Dr. A. H. Stevens, Fairmont.

Dr. Hunter's subject was "Radium Therapy in Cancer of the Uterus and Breast." Dr. C. B. Bride, Morgantown, led the discussion of this most interesting paper.

CABELL COUNTY

The regular meeting of the Cabell County Medical Society was held at the Hotel Prichard, Huntington, at 7:30 P. M., on Thursday, September 14, with a good attendance. The program consisted of a symposium on pediatrics.

Immunization was discussed by Dr. W. Byrd Hunter, and Care of the Mentally Handicapped Child was the subject of Dr. R. M. Sloan's discussion. Dr. W. D. Hereford discussed Nursing Service and Dr. George M. Lyon, Infant Mortality.

W. W. STRANGE, *Secretary.*

MERCER COUNTY

An interesting and well attended meeting of the Mercer County Medical Society was held in Bluefield on September 8. The president, vice-president and secretary of the society were appointed as the program committee for the next three months.

A case of spinabifide, operated on during the first 24 hours by Dr. Harry G. Steele, was presented. The baby seems to be thriving and the wound has healed. This case was very thoroughly worked up and presented by Dr. Steele.

Dr. Maxwell E. Lapham, of Philadelphia, Pa., then presented a paper entitled "Operative Obstetrics—Posterior Occiput, Face and Breech Presentations and Transverse Lie. Demonstrated with the Manikin." This paper was very interesting and instructive and was discussed by Dr. B. S. Clements and Dr. H. G. Steele.

Following the meeting a Dutch luncheon was enjoyed by the doctors in attendance.

R. R. STUART, *Secretary.*

FAYETTE COUNTY

A most interesting and instructive meeting of the Fayette County Medical Society was held at the White Oak Country Club, Oak Hill, on the evening of September 12 with a fine attendance. In addition to the Fayette county doctors, a goodly number of guests were present from the Kanawha and Raleigh County societies. Many of the doctors arrived early in the afternoon for golf. A bountiful dinner was served in the dining room of the club prior to the scientific session.

The essayist of the evening was Dr. Thomas W. Murrell, Associate Professor of Dermatology and Syphilology, Medical College of Virginia, Richmond. He presented a most interesting paper on "An Historical Review of the Factors in Specific Therapy." Discussion was opened by Dr. G. G. Irwin of Charleston and much interest was manifest in the subject by the general discussion which followed.

Dr. W. P. Bittinger of Summerlee, President, called the meeting to order and all business matters were dispensed with.

RALPH HOGSHEAD, *Secretary.*

MONONGALIA COUNTY

The members of the Monongalia County Medical Society met in the Hotel Morgan, Morgantown, on September 5. The meeting was purely a business session and many matters pertaining to the society were discussed.

Preceding the business session dinner was served in the Coffee Shop of the hotel to the doctors in attendance.

G. R. MAXWELL, *Secretary.*

McDOWELL AUXILIARY

The Woman's Auxiliary to the McDowell County Medical Society held its first fall meeting at the Appalachian Community Room, Welch, on September 19th, with most of the members in attendance.

A delicious luncheon was served by Mrs. H. C. Camper and Mrs. W. L. Peck. Immediately following the luncheon the business session was held, presided over by Mrs. W. B. Stevens, President.

The minutes of the previous meeting were read and approved and the treasurer's report given. A number of business matters were disposed of after which the meeting adjourned.

MRS. CECIL JOHNSTON, *Secretary.*

GENERAL NEWS

ANNUAL HOSPITAL GATHERING

Dr. N. W. Faxon, Rochester, New York, President of the American Hospital Association, will be the chief speaker at the Eighth Annual meeting of the Hospital Association of West Virginia to be held at the Stonewall Jackson Hotel, Clarksburg, on Tuesday, October 3, 1933. Dr. Faxon will make the annual banquet address. He plans to be in attendance throughout the day to take part in the discussions of the various hospital problems in West Virginia.

The hospital meeting will be opened at 10 o'clock on the morning of October 3 by Dr. A. G. Rutherford, President. Invocaion will be pronounced by Reverend J. Marion Smith, Pastor of the First Baptist Church, Clarksburg. Dr. H. H. Esker, President of the Harrison County Medical Society, will deliver the Address of Welcome and the response will be made by Dr. T. L. Harris, Parkersburg. This will be followed by the annual report of the Secretary, Mr. Joe W. Savage, and the President's Annual Address by Dr. Rutherford.

The afternoon session will be opened by Mr. John B. Hart, Charleston, Business Manager of Hospital Service, Incorporated. His subject will be "Group Hospital Insurance in West Virginia." Dr. R. H. Walker, Charleston, will then speak on "The Gross Income Tax as it Concerns Hospitals in West Virginia." Miss Ruth E. MacMaster, Superintendent of the Huntington Memorial Hospital, will talk on "Hospital Problems of Today," and the afternoon session will be concluded by Dr. Robert Bess, Keyser, on "Hospital Coöperation with the National Recovery Administration."

Dr. Faxon will be the only banquet speaker. The banquet toastmaster will be Dr. Chester R. Ogden, Clarksburg.

MEDICAL EXAMINERS MEET

A meeting of all special medical examiners of the Workman's Compensation Department was held at the Hotel Kanawha, Charleston, on September 30 with a fine attendance. The meeting was featured by an illlustrated lecture by Dr. Henry H. Kessler, medical director of the New Jersey Rehabilitation Clinic, on compensation problems. This was followed by a general discussion by the doctors present.

Luncheon was served for the visitors by 1 o'clock and the afternoon was spent at the Kanawha Country Club where most of the visitors indulged in golf. Dinner was served at the country club at 6:30 that evening and was followed by a second talk by Dr. Kessler.

This is the first meeting of its kind to be held in West Virginia and the Compensation department plans to make it an annual event. The meeting was sponsored by Mr. George Watson, Commissioner, and Dr. J. Bankhead Banks, chief medical examiner.

CONFERENCE OF SECRETARIES

The annual conference of state secretaries and editors was held at the Palmer House, Chicago, under the auspices of the American Medical Association on September 22-23, 1933. Forty states were represented at the conference and many interesting problems of organized medicine were discussed. West Virginia was represented by Dr. James R. Bloss and Dr. Walter E. Vest of the Journal editorial board, and Mr. Joe W. Savage, Executive-Secretary of the State Association.

The program was opened by Dr. Dean Lewis, Baltimore, President of the American Medical Association, who talked on "The Quality of Medical Care." Dr. Lewis urged better facilities for post graduate study. Dr. E. A. Mayerding of St. Paul, Minnesota, gave an allied paper on "Scientific Exhibits and Demonstrations at State Association Meetings," pointing out the feasibility of post graduate instruction at such meetings.

Dr. F. C. Warnshuis, Grand Rapids, gave a splendid report on "The Michigan Survey." One of the most practical papers of the meeting was presented by Dr. Walter L. Bierring, President-elect of the American Medical Association, on "Social Dangers of Oversupply of Physicians." Dr. Bierring pointed out that there was now a surplus of approximately 30,000 physicians in the United States and said that the number was increasing every year.

Dr. H. M. Camp of Monmouth, Illinois, read a paper on the "Work of the Educational Committee of the Illinois State Medical Society." This was a highly interesting study in lay educational work, although of little practical value to the smaller state associations. Dr. Camp stated that an annual appropriation of $12,000 was made for such work in Illinois under the direction of a full time committee secretary. The amount expended in Illinois is more than the entire income of a majority of the state associations. For the larger state societies, however, the Illinois educational plan was a model of

efficiency. What is true of Dr. Camp's paper was also partly true of an address by Dr. Thomas P. Farmer of Syracuse on "Postgraduate Work of the Committee on Public Health and Medical Education of the Medical Society of the State of New York." Both papers were highly commendable for the fine work accomplished.

One of the most practical papers of the meeting was presented by Dr. J. E. Tuckerman of Cleveland on "Medical Defense," which outlined the assistance given by the Ohio State Medical Association to its members sued for malpractice. Dr. C. W. Comfort of New Haven also gave a very instructive paper on "Work of the Committee on Ethics and Deportment of the Connecticut State Medical Society," which also dealt considerably with medical defense cases and their origin. The program was concluded by Dr. William C. Woodyard, Director of the A. M. A. Bureau of Legislation, on "Some Legislative Problems, Federal and State." Dr. Woodyard reviewed many of the hard legislative battles fought by the American Medical Association in the halls of Congress and pointed out how effectively the A. M. A. could be and was being supported in this work by the various state medical associations.

MORE ON MEDICAL FEES

(EDITOR'S NOTE: We take pleasure in publishing herewith a brief comment on medical economics prepared by Dr. Russell Wolfe, Elkins, and published in a recent issue of the Weekly Letter of the Elkins Rotary Club.)

What's all this fuss about Medical Economics? Briefly this: You, the so called middle class, or white collarman, are no longer able, because of reduced income etc., to pay what the doctor considers an adequate fee for medical services. The fee is becoming higher and higher because every time one of you drop out of the pay class and become a clinic or charity case your fellowmen are charged more in order to cover the cost of the service. The doctors rent and gasoline must be paid for, regardless of the source, whether it comes from you through increased taxation or from you in increased medical fees.

You, as a member of the Red Cross, a church, lodge, or Rotary Club have from time to time called upon the doctor to render free medical service for school children, crippled children, poor families, etc., and you have not been turned away. Even the state demands 1-5 to 1-6 the usual fee for surgical services. Who pays the difference? No one but the "pay case" from whom enough must be exacted to carry the overhead for the ever increasing amount of free service that is expected of your doctor.

The poor we have with us always and they will be cared for. The doctor asks that the burden be more fairly distributed. At present, less than .1% of the total population (the physicians) are expected to, and are carrying, 90% of the medical responsibility of the indigent. As long as this can be reflected back upon the "pay case" the doctor will not object, but now that the "pay case" is objecting, what is the doctor to do?

Unfortunately the Committee on the Cost of Medical Care allowed itself to be sidetracked from its real purpose and we have throughout the last year been bombarded by the press with group insurance plans, clinics, organized groups, central hospital systems, etc. These are but the dying wails of a medical minority, spawned in the late prosperous era, who is unable to adjust itself to our changed economic condition. The high pressure methods of big business will never supplant the personal relationship of doctor and patient. The pendulum is now swinging back to that sterling individual who has always held the central place in our medical world, the family physician. He it is who is able to scientifically treat and care for 95% of all the ills of mankind with what he can carry around in his little black bag. When our public fully realizes this the cost of medical care will return to its proper level. Come what may, prosperity or further depression, members of the medical profession can be counted upon to keep the faith.

PLASTIC SURGEONS MEETING

The annual meeting of the Society of Plastic and Reconstructive Surgery will be held in New York on October 16-18, 1933. Meetings will be held at the New York Academy of Medicine, New York Hospital and Cornell University Medical College, Institute of Ophthalmology, Columbia Medical Center, New York Post Graduate School and Hospital, Sydenham Hospital and the Manhattan Eye, Ear and Throat hospital. The medical profession is invited to attend.

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JAMES R. BLOSS, *Editor-in-Chief* . . . . . Huntington

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SYMPOSIUM ON HEART DISEASE*

DIGITALIS: ITS INDICATIONS AND CONTRA-INDICATIONS

By WALTER C. SWANN, M. D., F. A. C. P.,
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AFTER a few introductory remarks this paper will deal with the indications and contraindications for giving digitalis. One text-book allots forty-one pages to digitalis alone. Time will permit us to cover only a part of this interesting subject. In the pharmacopea of Wurtemberg in 1721 digitalis made its first official appearance. It was later dropped because it was assumed to be a dangerous drug. In 1785 Withering called attention to its wonderful effects in cardiac dropsy. His work has been of lasting benefit and Withering's tomb now bears the carving of a branch of fox glove. Digitalis is not a cure for heart disease. Harmful and dangerous effects may be expected from its use when contraindicated. The small doses of twenty years ago have been replaced by the larger more effective dosage. Cumulative action has been studied. Absorption and elimination have been explained. Better methods of standardization are now in vogue and reliable preparations are on the market.

The only use for digitalis is to modify the action of the heart. It has no direct effect upon the kidney or the blood pressure. Myocardial failure is the chief indication for digitalis. If these symptoms be mild use a slow method of digitalization; if the symptoms are severe and alarming, larger doses quickly given are best.

The one outstanding indication for digitalis therapy is congestive heart failure, and this condition may occur under many circumstances. Auricular fibrillation probably stands at the head of any list where digitalis therapy is to be considered. Clinical results will be most brilliant. Auricular flutter is a somewhat similar condition and will also be markedly benefitted. Flutter is not easily diagnosed but in any middle aged patient with a persistent pulse rate above 120, electrocardiograms should be made before giving digitalis.

Decompensated hearts are found in which the rhythm is normal and the rate slow. If edema, cardiac dyspnea, swollen liver and rales at lung bases are present, digitalis may be expected to give good results without much slowing of the rate. Even complete heart block, with a pulse rate of thirty may be benefitted by digitalis if decompensation is present. In cases of partial heart block digitalis is absolutely contraindicated because com-

*The first three papers of this issue made up a Symposium on Heart Disease presented to the Cabell County Medical Society on March 9, 1933.

plete block may be produced. Christian reports definite improvement in 74% of cases with a slow pulse, which corresponds to the percentage of success in auricular fibrillation.

My personal opinion and experience is that digitalis should not be given in coronary thrombosis. By causing the heart muscle to contract more forcibly there is much danger of rupture through an infarcted area that otherwise might have healed. Authorities differ in opinion as to good, bad, or indifferent results. This leaves one in doubt as to the best method of procedure. Study the action of digitalis on the heart muscle, remember it will not cure heart disease, and use it in coronary thrombosis only when you see definite indications. Cases of coronary sclerosis usually accompanied by degenerative changes in the myocardium do not respond as a rule to digitalis and even harmful results are often encountered.

Premature beats of auricular origin are often stopped by digitalis and even those of ventricular origin may respond. However one of the signs of digitalis poisoning is the production of premature beats in a heart that formerly was free from this irregularity.

In paroxysmal tachycardias digitalis is usually contraindicated but if the attack has lasted long enough to produce decompensation, then digitalis is indicated.

In pneumonia we have conflicting reports as to the efficacy of digitalis. Some workers use it routinely. Their good results have been disproven by others. A good rule to follow is to let the heart alone until definite signs of failure have appeared.

Digitalis is absolutely contraindicated in shock, unless it happens to be in a patient that has already had a decompensated heart. What happens is that the minute volume of an already overworked heart is cut down and harm results. Fortunately the dosage usually employed is so small that little or no affect is obtained from the digitalis. I also believe that few men now use digitalis in shock cases.

Digitalis will have very little effect on slowing the fast heart of thyrotoxicosis. It should not be used until signs of decompensation appear or auricular fibrillation sets in.

True nephritic edema will not be influenced by digitalis unless accompanied by a decompensated heart.

Stop digitalis medication in patients who show in a previously regular heart a coupling of beats or many extra systoles. Sudden pauses in pulse rate not accompanied by ventricular action should indicate a partial block and call for immediate withdrawal of digitalis. In a well digitalized patient, nausea and vomiting and sometimes visual disturbances and delirium call for cessation of treatment with digitalis.

In conclusion, digitalis is indicated in any heart failure of the congestive type. It does not matter whether blood pressure is very low or very high, whether or not there is valvular disease. If there is cardiac dyspnea, engorgement of the veins, pitting edema, swollen liver and congestion at lung bases digitalis in indicated.

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THE RESPIRATORY TRACT

The respiratory diseases occupy an important place among the illnesses that affect the human body. Concerning some of them, medical science has discovered much. In regard to colds and influenza, however, the world knows little. In Part VII of his serial, "Progress in Preventive Medicine," Dr. P. M. Ashburn discusses several of the respiratory diseases, including diphtheria, whooping cough, pneumonia and tuberculosis.

Whooping cough is most dangerous in early childhood. Pneumonia is one of the major causes of death. "Hope springs eternal" in finding a method of utilizing bacteria in the prevention, diagnosis and treatment of tuberculosis; until that hope is fulfilled, hygienic measures must be relied on. Among the other diseases discussed by Dr. Ashburn are meningitis, poliomyelitis and encephalitis; but of these diseases, comparatively little is yet known.

BEDSIDE DIAGNOSIS OF CARDIAC ARHYTHMAS

By R. M. Wylie, M. D.,
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Cardiac arhythmas include all disorders of rhythm, or alteration in the normal sequence of conduction and contraction, distinguished by changes in pace and variation in the force of contraction. Many of these disorders can be definitely detected only by polygraphic or electrocardiographic tracings. In order of the frequency of occurrence, we find first, auricular fibrillation, then premature contractions, alternation of the heart, and paroxysmal tachycardia, heart block and flutter.

A. *Sinus Tachycardia:*—This is one of the common disorders of pace. Normally the pacemaker sends out rhythmical impulses at the mean rate of about 72 per minute, which initiate contractions of the auricles, followed later by ventricular beats. When for any reason the impulses are sent out more rapidly, and the heart responds in normal manner, the condition is known as Sinus Tachycardia. It has no great significance aside from the conditions which produce this increase in rate. When the pulse is not too rapid and the lighting good, the normal a-c-v waves in the jugular vein may be seen. When the rate is much above 120, there may be confusion with auricular flutter, but in this condition the ventricles may be slowed by pressure over the carotids and there is usually some degree of heart block, which is not the case in auricular tachycardia. The usual pulse rate will range from normal to 120, but may be faster. It is this type of heart action which is seen in infectious diseases with elevation of temperature (except in typhoid-colon and intracranial infections with increased pressure), thyrotoxicosis, neurocirculatory asthenia, following exercise, emotional disturbances, pain, hemorrhage, shock, abdominal conditions interfering with free diaphragmatic movement, and certain drugs as caffeine, adrenalin, atropin and alcohol. It is characterized by a regular and rapid heart rate, associated with or preceded by some of the above conditions.

B. *Sinus Bradycardia:*—Here the pace of the heart is reduced to 50 or 60 per minute, but may be as low as 30. The rhythm may be regular or irregular. It is a phase of the fluctuation seen in the rate during rest and and sleep. It is normal in some individuals, especially those who have engaged in strenuous athletic exercises, such as rowing, foot ball, foot races and basketball, and may be associated with great powers of physical endurance. The explanation is believed to lie in increased vagal tone, and no great importance is attached to this disorder. It may be confused with heart block, but the latter condition is more common in older individuals, while sinus bradycardia is usually found in the young. It is frequently associated with extrasystoles, and vagus pressure will further reduce the rate, while exercise will increase it.

C. *Sinus Arhythmia:*—This is the most common disturbance of the cardiac rhythm, and is most often seen in childhood and early life. Here we have an inconstant vagus action, causing impulses to leave the sino-auricular node at a variable rate. It is characterized by a gradual waxing and waning of the heart rate, and the radial beats and apical pulsations correspond. In the respiratory type, an acceleration of the rate occurs during the inspiratory phase and a slowing during the expiratory phase. There are several other types of vagal irregularities not associated with respiratory action, and seen much less frequently. Here belong those resulting in syncope and fainting attacks, associated with profound slowing or actual cessation of the heart beat, and the irregular slowing and acceleration of the heart seen in neurocirculatory asthenia or "irritable heart". Vagal irregularities are abolished by any factor which markedly increases the average pulse rate. Thus they tend to disappear after the administration of atropine, with exercise or with fever.

D. *Premature Contractions:*—Here we find the usual cardiac rhythm interrupted by contractions occurring prematurely in response to newly formed impulses in the musculature. These premtaure contractions or extrasystoles differ from the usual physiological beat in two respects. First the impulse which gives rise to it is formed at an unusually rapid rate, and secondly it is not one of a rhythmic series. Hence we have a beat occurring earlier in the cardiac cycle than would normally be expected. The work accomplished by these beats is small, because the rest period which precedes them is short. They may or may not be strong enough to raise the aortic valves. The arterial pulse as a result of this beat will be characterized by either a feeble pulsation or a prolonged pause. Auscultation will reveal early first and second heart sounds when the aortic valves are lifted, but only an isolated and premature first sound when the ventricular pressure fails to exceed the arterial. Hence we find the heart sounds occurring in groups of threes or fours according to the above events.

Premature contractions may originate from the auricle, the ventricle, or from the tissues which unite them, but for clinical purposes we distinguish only auricular and ventricular extrasystoles. In the latter type, after the disturbance caused by the premature contraction the ventricle rests until another rhythmic auricular impulse arrives, and this period of rest is known as the compensatory pause. This period, plus that which occurred between the last normal beat and the premature one exactly equals that of two normal heart beats, and thus the original sequence is restored. In the case of auricular extrasystoles, there is an auricular systole, followed by a ventricular contraction, for the ventricle responds to each auricular contraction, be it normal or abnormal. Here again we have a long pause, but the whole period of the disturbance is not equivalent to two full cycles of normal rhythm.

E. *Paroxysmal Auricular Tachycardia:*—In this condition we find the normal mechanism interrupted by a series of rapid and regular beats, varying in rate from 100 to 200 per minute. It is the result of some area in the auricular musculature assuming the role of pace maker and sending out a regular series of impulses which result in ventricular contractions. There is obviously no sharp line of demarcation between the higher rates and flutter. It is found most often in the male, young adults rather than older people, and in those with no evidence of other cardiac abnormalities, though it may be asscoiated with serious cardiac disease. The attacks are characterized by sudden onset and offset, and may last from a few minutes to hours or days. In brief attacks there is usually a sense of palpitation, and there may be exhaustion, palor, cold damp skin, anginal pain or gastro-intestinal symptoms. Prolonged attacks will result in the usual signs of congestive heart failure. Diagnosis depends on the history of previous attacks, nature of the onset and offset, rate and rhythmicity, with little effect of exercise and change in posture. Vagal pressure is uncertain in its effects, it may stop the attack with a variable pause when the heart ceases to beat, then followed by normal sinus rhythm, or it may have no effect at all. Many bizarre methods have been found effective by these patients in stopping the attacks. This form of tachycardia when associated with frequent ventricular extrasystoles may so simulate auricular fibrillation as to require a tracing to decide the nature of the disturbance.

F. *Auricular Flutter:*—Here we have a series of new and rhythmic impulses which result in auricular contractions at the rate of from 200 to 350 per minute. It might be considered as an intermediate stage between auricular tachycardia and auricular fibrillation. It may be either a paroxysmal or permanent condition, and patients rarely see a physician during the paroxysmal attacks. One of the most characteristic features is the almost constant association with heart block, the auricular rates may range from 260 to 320 per minute, the ventricular rates being from 130 to 160, due to the existence of 2:1 heart block. Probably in the majority of these cases the diagnosis must depend upon tracings

rather than ordinary clinical means. A regular and persistent ventricular rate of from 130 to 160 in an elderly patient must always make one very suspicious of the existence of flutter. But it is to be remembered that any degree of block may exist from 2:1 ratio to complete dissociation, with a resulting ventricular rate of 40 or less.

G. *Auricular Fibrillation:*—Here the circus movement in the auricles results in such irregular and rapid impulses that the auricular muscles can not follow them, the result being that the auricles remain distended, and their surface presents a multitude of fibrillary muscular contractions, but no definite systolic movement. The impulses vary tremendously in strength, some failing to pass through to the ventricles at all, others producing varying degrees of contraction in the ventricles, both as regards time and force. The result is a pulse totally irregular as to rhythm and strength.

It is able to supply only indifferent news of the ventricular rate, as many pulsations fail to produce an arterial beat. The pulse is a medley of beats of various sizes, an intermingling of changing pauses. At times the beats are almost uniform in strength and spacing, then feeble pulsations may follow for a time, then the pulse may be lost altogether, and soon re-appear with renewed vigor. At the apex the heart sounds are modified. They vary in intensity and the variation runs hand in hand with the strength of the beats. The first and second sounds are present with each systole which results in an arterial pulsation, but a first sound stands isolated when the pulse beat is missing. When the ventricle beats irregularly at a rate surpassing 120 per minute, we may suspect that fibrillation is present, as well as when such irregular action is associated with signs and symptoms of serious heart failure. But when the heart rate is not so rapid and few or no signs of myocardial failure are present there may be some question as to whether the irregularity is due to fibrillation or some other condition. Here a very simple test is often helpful. Moderate exercise always accelerates the ventricular rate. In fibrillation the pulse becomes more irregular with its acceleration, while in other types of irregularity, the pulse steadies as its rate increases. The test for a pulse deficit should always be made as a count of the radial pulse alone may give a totally erroneous idea of the heart rate. Simultaneous counts of the apex and radial rates will reveal a rapid ventricular and relatively slow radial beat. The difference between these two rates or the pulse deficit, is characteristic of auricular fibrillation and gives one some idea of the degree of myocardial incompetence. Blood pressure readings will vary widely and are of no great value.

H. *Heart Block:*—A term used to designate an abnormal mechanism in which there is a delay in, or absence of, ventricular responses to the auricular impulses. Several types of this disorder are designated by name according to the portion of the conduction system where the block occurs. In Complete Heart Block the ventricles assume a rhythm of their own, beating quite independently of the auricles. The rate is unusually slow, often under 40 and generally quite regular, and almost unaffected by exercise or atropine. Each beat is accompanied by a first and second sound, and in addition during the long diastoles, muffled sounds due to the auricular systoles are often heard. A characteristic sign which is often present is the changing character of the first and second sounds. When the auricular and ventricular contractions begin together, the first sound is intensified, and when they fall almost together, the first or second sound may be reduplicated. Sometimes a prominent venous pulsation in the neck is visible when the auricle fails to empty as a result of the auricular and ventricular systoles occurring at the same time with the resulting intensified first sound. Single dropped beats are not difficult to detect, and during the pause which results, neither sound nor movement can be detected at the apex. This is a form of partial block, and all degrees occur from a prolongation of the interval between auricular and ventricular contractions up to that of complete block.

INTERPRETATION AND SIGNIFICANCE OF CARDIAC MURMURS

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ONLY the more common cardiac murmurs are to be considered in this discussion and no attempt will be made to go into detail regarding the various physical characteristics of the murmurs described, but rather to stress the significance and importance of such murmurs as an aid in arriving at a correct impression as to the presence or absence of actual heart disease.

According to White, "cardiovascular murmurs are produced by the vibration of the valves and walls of the heart and great vessels, resulting from the rush of blood from a passage of relatively narrow calibre to one of much greater calibre, or by the vibration of some tissue floating in the blood stream, one end of which is fixed to valve, heart or vessel wall". He considers the relation between the calibres of two adjoining parts of the heart or blood vessels and not the absolute size of the calibre of either, as the important factor in the production of murmurs.

The most important facts to know regarding a murmur are: (1) Its place in the cardiac cycle; (2) Its point of maximum intensity; (3) The area over which it can be heard; and (4) The effects of exertion, respiration, or position upon it. Less important are the physical characteristics of the murmur itself.

Systolic murmurs are by far more common than those occurring during other phases of the cardiac cycle. It is very important to know that most systolic murmurs do not indicate the presence of organic heart disease, and quite often they can be classed as functional murmurs, yet this conclusion should be reached only after careful examination of not alone the heart but of the other systems as well, for frequently such murmurs are indicative of the presence of some important or serious disease acting on the circulatory apparatus without the actual presence of heart disease itself. Apical systolic murmurs, as a rule, begin early in systole, either with or immediately following the first sound and vary in intensity and duration from the very slight, short murmur to the long and loud murmur filling all of systole. The more intense the murmur and the nearer the heart to the stethoscope, the greater the area over which it can be heard, as is true of the transmission of nearly all murmurs. The majority of apical systolic murmurs can be best explained as due to systolic regurgitation of blood through the mitral valve back into the left auricle. Where organic disease or deformity of the mitral valve is present permitting regurgitation to occur, such disease is usually rheumatic in origin. Organic disease of the heart with dilatation, without any deformity of the mitral valve may be the cause. The majority of apical systolic murmurs, however, are due to some extracardiac condition producing a temporary or more permanent dilatation of the heart, with an absence of organic heart disease and without deformity of the mitral valve.

Besides mitral regurgitation an apical systolic murmur may be due to transmission of a systolic murmur from the base such as occurs in some cases of aortic stenosis. This murmur is nearly always maximal over the aortic area.

Occasionally an apical systolic murmur can be classed as respiratory in origin, due to the mechanical action of the heart beat in forcing air in and out of adjacent lung tissue. This type of murmur usually varies greatly during different phases of respiration disappearing as a rule at the end of full inspiration.

Systolic murmurs heard at the base may be divided into two groups; (1) Those heard over the aortic valve area, usually maximal

in the second intercostal space just to the right of the sternum; and (2) Those heard over the pulmonic valve area, usually maximal in the second intercostal space just to the left of the sternum.

The more common causes of the systolic murmur heard over the aortic area are: (1) Dilatation of the aorta; (2) Aortic stenosis; (3) Aortic aneurysm; and (4) Transmission of a systolic murmur from the pulmonary area and less frequently from other areas. Of these, simple dilatation of the aorta such as occurs in chronic hypertension, arteriosclerosis, or luetic aortitis, is the most common. Transmission from elsewhere is usually signified by maximal intensity elsewhere. Aortic stenosis, resulting from rheumatic or sclerotic changes in the valve, and aneurysm, are less common causes of such a murmur.

Systolic murmurs heard over the aortic valve area are usually transmitted along the larger arteries of the upper chest and into the neck, the more intense the murmur the farther the transmission. The more harsh and rough the murmur the more likely is aortic stenosis to be present as a cause of the murmur.

The most common of all heart murmurs is the systolic murmur heard over the pulmonary area. Should it be absent even in a normal individual in the erect position it can usually be brought out by assuming a reclining position and fully exhaling. A systolic pulmonary murmur may, therefore, be considered as physiological in the vast majority of cases, and since other causes of this murmur occur rather rarely no attempt is made to include them in this discussion, except to note that the systolic murmur occurring in aortic stenosis is quite often well heard over the pulmonic area. Diastolic murmurs, while occurring much more infrequently, are of far more importance than systolic murmurs. At the apex the most common diastolic murmurs heard are those due to mitral stenosis and those due to aortic regurgitation. The murmur of mitral stenosis is usually of low pitch and of a low rumbling character. It does not, as a rule, begin until after the second heart sound and is localized at the apex, being most frequently over a very small area, probably not over 2 to 3 cms. in diameter, with no transmission beyond. It is better perceived, as a rule, with the patient in the recumbent position and by use of the bell type stethoscope. When normal rhythm is present one often notes a fairly marked accentuation of this diastolic murmur just before or at the beginning of the first heart sound, and in some cases this presystolic accentuation is the only part of the murmur audible, yet one should be careful in making a diagnosis of mitral stenosis in the presence of this presystolic accentuation without the preceeding diastolic murmur.

Aside from true organic mitral stenosis and the transmitted murmur of aortic regurgitation, as the causes of diastolic murmurs heard at the apex, such a murmur is present at times in well marked aortic regurgitation, not as a result of transmission and without the presence of mitral valve pathology, yet due to relative or functional mitral stenosis. The production of this murmur, first described by *Austin Flint* in 1862, is little understood, but is probably associated with left ventricular dilatation.

The fact that most diastolic murmurs heard at the apex, when due to organic disease of the mitral valve have definite characteristics and are accompanied by a history of rheumatic infection, simplifies, to a large extent, our interpretation of such murmurs.

Over the base of the heart, by far the most common diastolic murmur heard, is the one associated with aortic regurgitation. Pulmonary regurgitation as a cause of a basal diastolic murmur occurs but rarely.

The most important and usual characteristics of the murmur due to aortic regurgitation are its maximum intensity over the midsternum and in the 3rd and 4th intercostal spaces just to the left of the sternum rather than over the 2nd intercostal space just to the right of the sternum. Its transmission is often wide, frequently to the apex and left axilla and less loudly upward. Use of the Bowles type stethoscope in most cases permits

of better perception, as does examination of the patient in the upright rather than in the recumbent position.

The presence of a diastolic aortic murmur practically always signifies organic disease of the aortic valve and the clinical conditions responsible for such disease are lues, rheumatic infection and sclerotic changes.

While murmurs in general often furnish valuable information in the examination of the cardiac patient, one should always bear in mind that serious heart disease may be present in the absence of all murmurs. Not alone may this be true before the onset of actual congestive failure, but quite often as congestive failure progresses murmurs previously heard will be found to disappear.

At times more than one of the described murmurs will be present in the same patient, yet the individual murmur usually retains certain of its characteristics that enable us to suspect the presence of the double lesion.

Finally, while the interpretation of cardiac murmurs is of definite importance, it is usually through other equally valuable methods of study of the heart and its action, that information is gained on which we base our immediate treatment and prognosis.

PRACTICAL VALUE OF INFORMATION OBTAINED FROM CEREBRO-SPINAL FLUID STUDIES*

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THE cerebro-spinal fluid is one of the highly important biological system of the body, the investigation of which is often of inestimable practical importance in the adequate appraisal of an illness. Certainly in cases which have neuro-psychiatric aspects no examination is complete without taking into consideration the information that can be obtained from the physics and chemistry of the spinal fluid, information which can be obtained from no other source. This paper is designed to comment on the many useful data of practical rather than theoretical importance with the hope that such studies may encourage the wider use of this most useful and necessary procedure.

It would be well to consider briefly the anatomy and physiology of the structures concerned in the production, resorption and circulation of this fluid. Between the pia and the arachnoid membranes of the brain and spinal cord, lies the subarachnoid space, reduced to a mere slit in some regions, expanding into capacious spaces in others and containing the fluid coverings of the nervous system, the cerebro-spinal fluid. The various protective and nutritive coverings of the central nervous system are continuous envelopes. The fluid envolope is, of course, in direct continuity with the cavity of the spinal canal and the ventricular system of the brain, a constant flow taking place from one to the other, according to the general plan of the circulation of the cerebro-spinal fluid.

The formation, resorption, and circulation of the cerebro-spinal fluid is still a matter of much controversy, but the prevailing opinion is that the choroid plexuses in the lateral as well as the third and fourth ventricles secrete the fluid and serve as reversible semipermeable membranes and that the direction of flow depends upon the relative osmotic tension between the blood plasma and cerebro-spinal fluid. These plexuses have a great influence in the regulation of the cerebro-spinal fluid tension on account of their favorable position and richness in capillaries. The epithelial lining of the plexuses are thought to have the function of withdrawing from the cerebro-spinal fluid the products of neural catabolism, which pass into the fluid from the

*Read before the Kanawha Medical Society, Charleston, W. Va., Jan. 10, 1933.

pericellular canals. Thus, the plexuses serve the purpose of maintaining a constant intracranial tension as well as maintaining the nutritive power of the central nevrous system.

From its formation within the ventricles, the fluid flows, according to Cobb, from the fourth ventricle into the cisterna magna from whence it passes downward in the spinal canal, forward into the basal cisterns and thence over the cortices to enter again the general circulation by resorption through the arachnoid villi of the pacchionian granulations, situated on either side of the superior longitudinal sinus.

Assuming the principle of osmotic balance between blood plasma and cerebro-spinal fluid, clinicians have devised methods of altering at will the intracranial tension. This is accomplished by changing the molecular or ionic concentration of the blood. The practical application of this knowledge is obvious. In states of cerebral hypotension found accidentally in the routine pressure studies on patients or as result of acute head injuries, as often happens, or for relief of the troublesome lumbar puncture headache, the intravenous injection of distilled water is effective in raising the low intracranial pressure and thus relieving the symptoms. Conversely, in dealing wtih states of increased intracranial pressure as found following trauma, in space restricting lesions, edema, or from inflammatory or infectious diseases of the brain and its coverings, the intravenous injections of glucose in 50% solution, which is hypertonic, is an indispensible aid to the surgeon in the control of intracranial tension, often making successful operative procedures possible, while in non-surgical conditions of increased intracranial tension, this means is effective in reducing the tension.

On the other hand, the selective qualitative and quantitative action of the capillaries to the passage of colloids and crystalloids from the blood plasma to the cerebro-spinal fluid and pericellular spaces, acts as a barrier. Under normal conditions the hematoencephalic barrier protects the cerebro-spinal fluid against the invasions of foreign and noxious agents, which at a given moment, may be present in the blood. This barrier at another time may permit the passage of substances useful and necessary to the life and activity of the neural elements.

The cerebro-spinal fluid, according to the common characteristics of all fluids, being non-compressible and liquid, is admirably suited to take up and equalize in all directions all factors bringing pressure to bear on the central nervous system. These characteristics, however, are at the same time a potent source of danger to the delicate structures contained within the coverings of the brain on account of both extrinsic and intrinsic harmful influences. In case of trauma by extrinsic factors, the cerebro-spinal fluid by its unyielding equalization of pressure, may serve to transmit directly to the nervous system forces which may bring about the destruction of the delicate nerve cell. The role of the cerebro-spinal fluid as a source of danger to the central nervous system exists in the wide-open pathways which lie before an infection entering the subarachnoid space, whence it may rapidly and widely disseminate over the entire length and breadth of the brain and cord. Therefore, under certain conditions, the very advantages of these coverings are their disadvantages; but under normal circumstances they are admirably fitted to play their parts in the protection of the central nervous system.

Are there any contra-indications to spinal puncture? States of increased intracranial pressure are regarded as relative contra-indications and under such circumstances, the procedure should be done with caution as untoward results might follow, particularly in posterior fossa neoplasms, where, by sudden release of pressure from below, there is a likelihood of causing a herniation of the medulla into the foramen magnum with resulting medullary edema and respiratory failure. We think that spinal puncture should not be done without an ophthalmoscopic examination of the eye grounds. Choked disc is certainly a warning as to possible potentialities in such cases.

The estimation of the cerebro-spinal fluid

pressure is an important part of the spinal fluid studies and should be regarded as a routine measure. The water manometer after the method of Ayer because of its simplicity has largely replaced the more cumbersome mercurial manometer. For pressure readings, the center of the patients head must be in the same plane as the spinal canal and satisfactory relaxation must be obtained, else the readings are misleading. It is often necessary to divert the patient's attention and to wait some five minutes before the true pressure reading can be ascertained. Punctures with a minimum of discomfort facilitate these readings as does reassurance, and the carrying out of the procedure in the patient's own bed, rather than in the operating room, which adds greatly to the gravity of the ordeal, in the patient's mind, and tends to prevent adequate relaxation. Pressure is increased in space restricting lesions, inflammatory, traumatic and other pathological states.

Pressure dynamics are indicated in suspected spinal cord compression of whatever source, the so-called Queckenstedt or block test. Normally, upon bilateral jugular compression for ten seconds, there is a prompt, free and full rise in the fluid level in the manometer, with a prompt return to the normal level upon jugular release in about fifteen seconds. In a complete compression there is no rise in the fluid level and no pulse oscillation, in partial block there may be a delayed rise and still greater delay in fall to the normal level. We have used the injection of air as a confirmatory measure—a few cc's of air when injected into the needle will pass into the skull cavity and give rise to an immediate headache in the top side of the head if no block exists and pain at the site of the lesion if a block does exist. This test should always be made use of in cases of fractures of the back with complete or partial physiological interruption of the conduction pathways of the cord and solely upon its results do we rely for indication or contra-indication for laminectomy. This procedure is thoroughly standardized. The test is also of inestimable value in suspected lateral sinus thrombosis, and permits an early and accurate diagnosis of this most serious complication of otitic disease, which can often be relieved by prompt surgical interference.

The chemical examination of cerebro-spinal fluid is a routine procedure in suspected cases of central nervous system disease, and of pre-eminent diagnostic value among these chemical tests is the quantative protein determination. The cerebro-spinal fluid normally contains small quantities of globulin and albumen, which are apparently derived from the blood plasma. The normal protein value is from 15 to 35 mgms. per 100 cc's of fluid. While an excess of globulin is not pathogomonic of syphilis, yet a negative globulin to Pandy's reagent has much greater value in that it almost certainly excludes syphilis. This is due to the fact that syphilitic lesions disturb the ratio between globulin and albumen when often the total protein is not much elevated. The total protein is elevated in inflammatory, infectious, and degenerative diseases as well as in brain and spinal cord compressions. In the latter condition we often encounter what is known as the Froin Syndrome, which is pathogomonic of cord compression. Here the fluid is a deep yellow and coagulates upon standing due to a tremendous increase in protein. In partial block the protein content is elevated in the lumbar sac and normal when obtained from the cisterna magna, a finding of great diagnostic aid.

While no especial mention is made in the literature of the sugar determinations on the spinal fluid, the writer has come to consider this a most useful source of information in the intelligent handling of the meningitides. In fact, both its diagnostic and prognostic value is of the greatest significance. It may be taken as proven that normally the concentration of sugar in cerebro-spinal fluid is about 65 mgms. which is slightly over half that in the blood and that variations in one correspond to variations in the other, and that in various pathological states there is an interruption in this ratio. Epidemic encephalitis and a few other conditions are associated with a hyperglycorrhachia, but the various men-

ingitides cause a more or less severe reduction in the sugar content. This glycholysis is constant in meningitis and its extent is in consonance with the severity of the infection. The sugar content may be used as an accurate guide in the administration of serum in treating meningicoccic meningitis, its approach to normal value indicates that enough serum has been given and conversely, a continued low sugar points to a fatal outcome. This is a quantative test and should be expressed in mgms. per 100 cc's.

Another chemical constituent of diagnostic value is the sodium chloride content, whose normal value is around 750 mgms. While the chloride content is affected by starvation, vomiting and other conditions, its chief value from a practical and diagnostic standpoint lies in the aid it gives in tubercular meningitis; given a lymphocytosis, with moderate or severe sugar reduction and chlorides of below 620 mgms., we have presumptive evidence of a tubercular meningitis. The positive diagnosis of course, rests on finding the bacilli in the pellicle which usually forms in tubercular fluid or by guinea pig inncoulation and subsequent autopsy.

Many other compounds have been found normally and pathologically in cerebro-spinal fluid—such as calcium, urea, lactic acid, acetone—but they are as yet of little or no practical or clinical value.

One of the earliest tests employed on spinal fluid and still one of the most important examinations is the cell count, which ranks with the protein determination and the Wassermann in the bio-chemical investigations of nervous diseases. A count of more than 10 lymphocytes is almost universally admitted to be pathological, and to be evidence of an inflammatory process somewhere within the cerebro-spinal subarachnoid space. The cell count should always be done on fresh fluid, preferbaly with Unna's polychromic methylene blue stain, from which immediately the differential count as well as any red cells that may be present may be accurately made. The differential count is always of value in diagnosis as certain diseases, such as Tuberculosis, Syphilis and a few other conditions have a preponderance of lymphocytes. In Poliomyelitis, lymphocytosis is constant early, but later gives way to a polymorphonucleosis. Eosienophiles, endothelial and plasma cells, and even cancer cells may be found in certain cases of sarcomatosis of the central nervous system.

The Wassermann test is still the most important and reliable biologic test in the diagnosis of neurosyphilis. This test should be checked, however, by cell count, globulin, total protein and gold curve. The Kahn test is not so reliable on spinal fluid.

The bacteriological study of the cerebrospinal fluid is of the most specific diagnostic value and it is upon the laboratory that we rely for guidance in isolating and identifying the organism. The presence of a cloudy spinal fluid at once places the responsibility on the bacteriological laboratory for intelligent care of a grave situation. Cultures on various media should always be planted and the stained smear searched for the causative organism.

Aside from the chemical, bacteriological, cytological, and biological properties, the physical characteristics of cerebro-spinal fluid are of diagnostic import. Normal fluid is "as clear and limpid as spring water". The color is altered in various pathologic states. It is hazy or cloudy in inflammatory and infectious diseases, bloody in cerebral and spinal trauma or spontaneous hemorrhage, yellow in spinal cord compression and a few days after bleeding. It is often necessary to determine whether or not bloody spinal fluid is due to an error in technique or blood in the subarachnoid space. A "bloody tap" will clear up in successive tubes, will coagulate on standing and will show a clear supernatant fluid upon centrifugization. True subarachnoid bleeding will be of uniform color in successive tubes and when centrifuged or allowed to stand will show the typical xanthrochromic supernatant fluid of hemolysis.

The cerebro-spinal fluid is utilized for further diagnostic purposes in certain other ways.

In cord compression where a more accurate localization of the lesion is desired than that obtained from the clinical neurological examination, or as a verification of suspected compression, partial or compete, iodized rape seed oil is injected into the cisterna magna and its passage down the spinal subarachnoid space watched by fluoroscope and marked by x-ray plates. The oil coming to rest at the site of the obstruction.

Spinal air injections followed by encephalograms to denote any change in the shape, size and position of the ventricles together with any distortion of the cortical pathways and basal cisterns such as is caused by tumors, abscesses, aneurisms, cysts, inflammations, etc., have become a frequent and indispensable aid in neurologic practice. This procedure is also utilized therapeutically in certain properly selected post-traumatic headaches. While the reaction is a severe one, from which fortunately, few tragedies result, it should not be used indiscriminately or by those not prepared to handle promptly the complications that might result.

Ventriculograms following the introduction of air into the posterior horns of the lateral ventricles is a safer procedure and the method of choice in the presence of increased intracranial pressure even though it is a major surgical procedure. It is of indispensable aid in localizing cerebral neoplasms.

While the lumbar puncture should not be made a major surgical procedure by an operating-room setting, neither should it be regarded as such a simple procedure as to be done in one's office after which the patient is allowed to get up and proceed about his business. We believe such a practice to be most reprehensible and if persisted in is sure to be associated with unpleasant experiences, which tend to bring this most useful procedure into ill repute. It is our invariable custom to hospitalize all such patients over night and to insist upon recumbency and when one adheres to this inflexible rule, the incidence of the troublesome post-puncture headache, whatever its source, will be reduced to a minimum.

One encounters a deep rooted prejudice on the part of patients and their friends against the spinal puncture. Some of you, perhaps, read the story "On being clinicked" which appeared in one of the popular lay magazines a few years ago in which an old Irish woman went to the City Clinic to be examined for her numerous complaints and was told by an interne that a spinal puncture would be done if all the other tests were negative. All her symptoms quickly disappeared and so did she and in the night, since she mistook the word spinal for final, and she was quite sure she didn't want a *final* puncture.

This procedure can and should be done with very little more pain and discomfort than is occasioned by a hypodermic injection. It is needless to add that strict asepsis should obtain, the writer uses iodine and alcohol for the skin preparation, sterile gloves and towels and prefers that the patient lie down and on the left side, thighs flexed on the abdomen and back bowed. The thighs and shoulders as well as the spinal canal and posterior occipital protuberance should likewise be in the same respective planes. The fourth lumbar interspace is the site of choice and is found opposite the iliac crests. With the thumb of the left hand the spinous process is palpated and by pressing in rather firmly with the nail of this finger, a small hypodermic needle can be almost painlessly introduced intracutaneously and a wheel of 1% novocaine injected through which the needle is passed. After the skin is anesthetized it is not necessary to inject novocaine into the deeper structures and the rest of the puncture is painless as long as one keeps the needle in the midline plane. If bone is encountered pain is produced and if the subarachnoid space is entered to the right or left of the midline, one of the sensory roots might be struck, which causes no damage, but gives the patient a lightning like pain down the corresponding leg. The difficulties encountered in doing lumbar punctures are usually due to faulty position of the patient and when the position is correct, even on the obsese whose spinous processes are not palpable, the canal may be entered without diffi-

culty. I can see no advantage in the upright position for a spinal tap.

Punctures into the cisterna magna are extremely useful and at times necessary, and are no more difficult that lumbar punctures though more dangerous unless one is familiar with the anatomy of the space. The procedure is extremely dangerous in restless patients for obvious reasons and in many posterior fossa tumors and inflammatory conditions, the space is completely obliterated. The technique of the puncture is much the same as in the lumbar region. The position of the head should be in moderate extension to relax the neck muscles so as to enable one to palpate the bony landmarks of the posterior rim of the foramen magnum. We feel that it is much safer to remove the stylet of the needle after the neck structures have been penetrated for the reason that fluid appears in the needle a moment after the dural sac has been entered, which is a factor of great safety. The cistern is usually found at a depth of some four to five cm., and this distance should be marked with a bit of rubber on the needle as an accurate landmark.

Cisternal punctures should be used more frequently for the introduction of serum in meningococcic meningitis, as well as for drainage in other forms of meningitis. It is often necessary to resort to cisternal puncture for drainage after spinal block in the meningitides as well as advantageous to do a through and through cistern-lumbar lavage to relieve this block. As stated before, lipiodol is introduced into the cistern and in certain cases of partial compression of the cord it is of great help to have manometers connected with both cisternal and lumbar needles so that differences in the dynamics can be more readily demonstrated.

In all lumbar punctures for routine diagnostic and therapeutic purposes, we prefer a fairly large needle—about an 18 gage—which is much more satisfactory than a smaller one and causes no more discomfort. The smaller ones do not permit free drainage of bloody or purulent fluids and are not as satisfactory for the studies on dynamics.

Suite 224, Professional Building.

PRESENT DAY FEUDS

One of the difficulties in bringing about a better organization in medicine are the instances of suspicion one doctor has of another. There are three causes for this unfortunate condition, jealousy of professional reputation, an inferiority complex, and the gossip of patients. Two men practicing in the same locality, for years the best of friends, suddenly find themselves at swords' points. The most frequent cause of the trouble is repeated gossip. Dr. A's patient called in Dr. B; Dr. A's patient has employed him for years, but through representations of the family or neighbors he has been induced to change. The patient does not have the courage to tell his old medical adviser he desired to change; the other doctor neglects or forgets to call his colleague and tell him he has been called to see his patient. Sometimes the patient does not tell Dr. B he had been employing Dr. A. Dr. A first hears of the change from some person, who perhaps does not like Dr. B. The story he hears is not so good as far as Dr. A's professional ability is concerned. One of these men is sure to hate the other. When these two men go to a gathering of their profession they both suffer, each is afraid the other will get an advantage and sometimes the weaker stays away. The whole affair is petty and not worth the attention of either.

We seldom see these feuds among the younger men.

If a few friends of such men, members of the county society, would get together they could break up these little two-man feuds that interfere with united professional action.

This situation may be adjusted, too, according to the Principles of Medical Ethics of the American Medical Association.

Article V—Difference Between Physicians Arbitration: SECTION 1.—Whenever there arises between physicians a grave difference of opinion which cannot be promptly adjusted, the dispute should be referred for arbitration to a committee of impartial physicians, preferably the Board of Censors of a component county society of the American Medical Association.—*Pennsylvania Medical Journal.*

THE EFFECT OF ANALGESICSON ON THE CLINICAL COURSE OF RHEUMATOID AND MIXED ARTHRITIS*

PRELIMINARY REPORT

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ANTHONY A. RESSA, M. D.
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DURING the course of some extended research in a large hospital clinic chiefly upon etiologic problems connected with rheumatoid and mixed arthritis, we have observed certain striking clinical effects that are apart from immunologic and inflammatory-reparative reaction. It has, therefore, seemed proper to report these observations purely in a preliminary way, thus adding to the published evidence and possibly stimulating parallel investigation.

Our observations indicate that palliation of pain is usually accompanied by unmistakable clinical improvement as judged not only by the signs and symptoms, but by a reduction in the sedimentation rate and the shift to the left in the nuclear count (technique of Cooke and Ponder)[1]. In that particular portion of the above investigation where we noted these ef-

*From the Arthritis Clinic of the New York Polyclinic Medical School and Hospital.

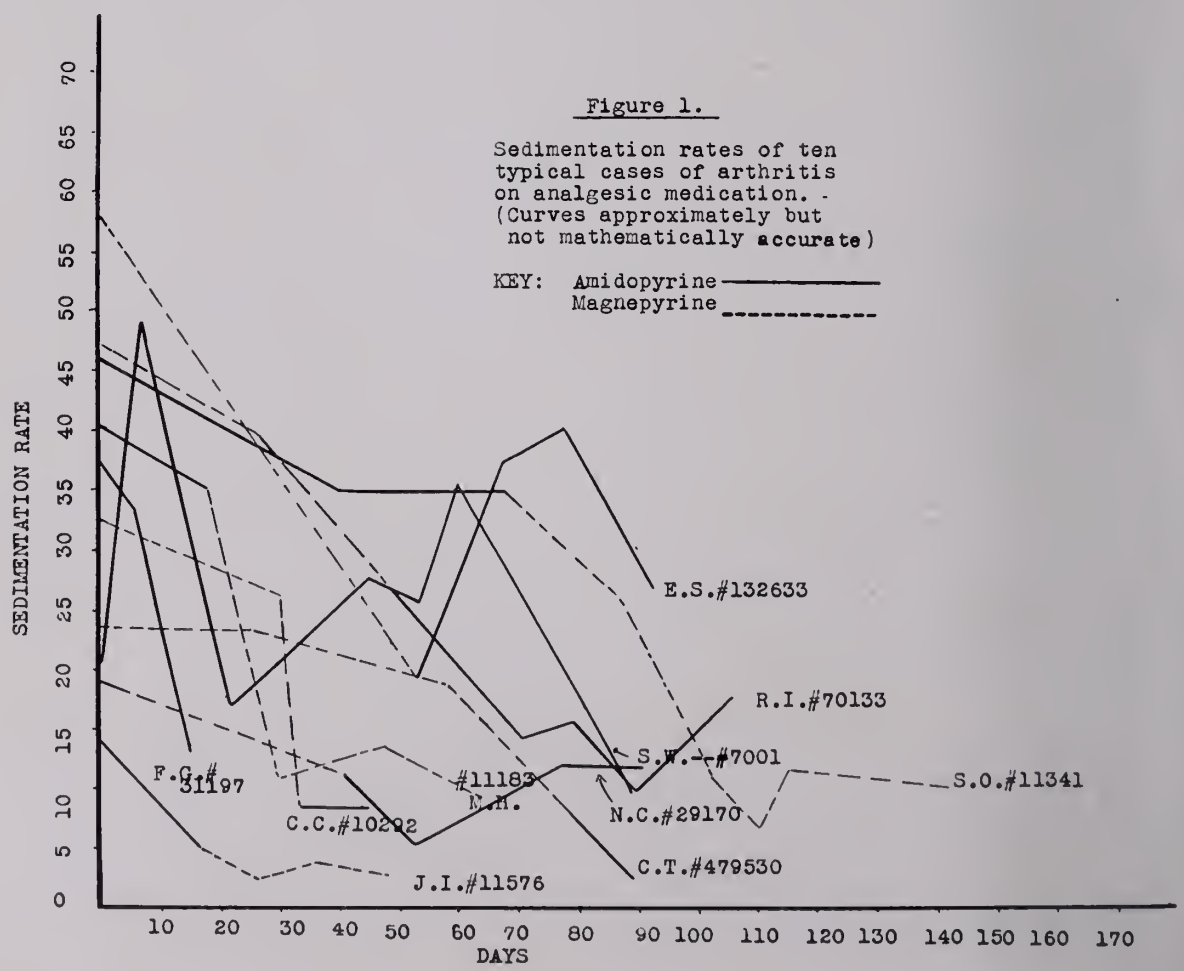
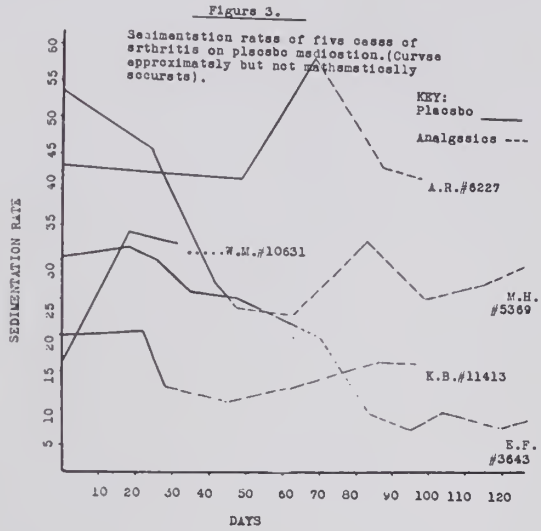


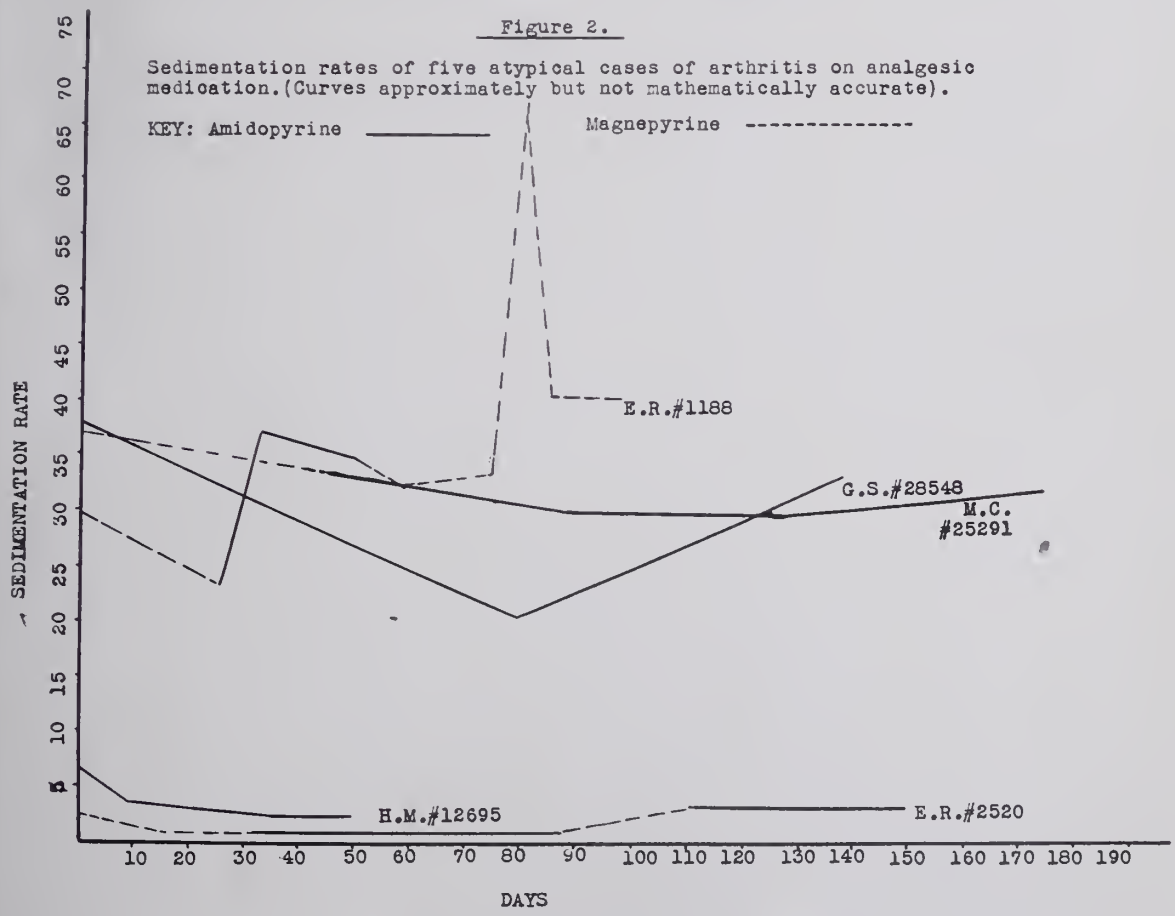
Figure 1.

Sedimentation rates of ten typical cases of arthritis on analgesic medication. (Curves approximately but not mathematically accurate)

fects, we employed solely as analgesics a combination of magnesium and amidopyrine (magnepyrine) as suggested by the work of Barbour and Winter[2], and pyramidon as suggested by Leber[3]. (Leber's dosage was not equalled). The appended charts are to a large extent self-explanatory, but they show, in brief: first, sedimentation curves of ten patients with rheumatoid or mixed arthritis, one-half started with pyramidon and the other half started with magnepyrine, as analgesics, and continued upon whichever the other drug might be. These are typical curves. Secondly; sedimentation curves of five patients that show atypical curves. Thirdly; sedimentation curves of five patients on placebo medication that show non-reparative curves. Fourthly; a tabulation of the twenty cases cited, giving the percentage of Type I cells in 100 polymorphonuclear neutrophils, early and late in treatment. The analgesics were used in doses of either fifteen or twenty grains per day of either drug. The magnepyrine appeared to be better tolerated by the stomach but otherwise the two were roughly equivalent.



It should be recognized that these graphic representations are illustrative and not inclusively statistical. They represent a typical



picture as seen by the author in hundreds of cases. Variations in many patients are inevitable, but a definite majority of cases react as shown in the first chart (Fig. 1). It is scarcely necessary to add that improvement of joint symptoms went hand in hand with the above described phenomena. It should also be pointed out that in the tabulation of the nuclear count (Fig. 4) neither the ones giving the most, or least, marked shift to the left were selected in any case, but a typical early count and a typical late count were selected for chart purposes.

At the time this work was begun we did not fully realize the value of the sedimentation rate and the nuclear count in following the progress of the patient. Later extensive sedimentation rates (by Westergren's[4] modification of Fahraeus'[5] technique) and nuclear counts were determined. We have found as others have reported [6, 7, 8, 9] that the degree of change in the clinical symptoms is reflected in parallel changes in the sedimentation rate and nuclear count.

Discussion:—During the course of this work, various modifying factors or techniques have been published so that it is desired only to set down here very preliminary notes. The work of Walton[6] and others upon the sedimentation rate; of Dawson and Boots[7] on infectious and immune problems; and discussions at various medical meetings; all have indicated the advisability of checking very carefully the mass of statistics which we have accumulated on the patients in our clinic before submitting them for final publication. Further, the interesting question of the toxicity of amidopyrine bodies is presently being investigated, particularly in the light of the recent work at the Rockefeller Institute by Schultz[10] and his associates. The latter has led us into cer-

FIGURE 4—Nuclear counts of the twenty cases shown in Figures 1, 2 and 3 (Representative counts).

Case & No.	Diagnosis	Early Nuclear Counts Percentage Type 1 Cells	Late Nuclear Counts Percentage Type 1 Cells
	Group 1 (corresponding to Fig. 1)		
E. S. No. 132633	Rheumatoid arthritis	22%	10%
J. I. No. 11576	Rheumatoid arthritis	14%	12%
S. W. No. 700133	Mixed arthritis	11%	8%
M. H. No. 11183	Mixed arthritis	11%	6%
F. G. No. 31197	Rheumatoid arthritis	18%	8%
N. C. No. 29170	Mixed arthritis	6%	8%
S. O. No. 11341	Mixed arthritis	28%	19%
C. T. No. 479530	Rheumatoid arthritis	10%	10%
C. C. No. 10292	Mixed arthritis	12%	10%
R. I. No. 70133	Rheumatoid arthritis	13%	8%
	Group 2 (corresponding to Fig. 2)		
M. C. No. 25291	Mixed arthritis	21%	16%
E. R. No. 2520	Mixed arthritis	12%	12%
H. M. No. 12695	Mixed arthritis	8%	8%
G. S. No. 28548	Rheumatoid arthritis	21%	14%
E. R. No. 1188	Mixed arthritis	20%	16%
	Group 3 (corresponding to Fig. 3)		
E. F. No. 3643	Rheumatoid arthritis	19%	8%
W.M. No. 10631	Rheumatoid arthritis	18%	10%
M. H. No. 5369	Mixed arthritis	28%	12%
A. R. No. 6227	Mixed arthritis	13%	14%
K. B. No. 11413	Rheumatoid arthritis	11%	10%

NOTE: The above counts are fairly representative of the early and late stages of treatment the "high" and "low" figures being chiefly rejected. One hundred and thirty-three separate non-filament counts were done on the above 20 cases.

tain toxicity studies which require further elaboration.

Upon the very simple question of the effect of pain relief, without other treatment, in the majority of our cases this has been accompanied by a reduction in the sedimentation rate and in the shift to the left in the nuclear count, gain in weight, and increased joint mobility. In a fair number of cases there was also a moderate euphoria. In a subsequent paper we will discuss more fully the somewhat controversial points here noted but purposely omitted from this paper.

Summary:—(1) Relief of pain in rheumatoid and mixed arthritis appears to go hand in hand with clinical improvement.

(2) Relief of pain by analgesics in rheumatoid and mixed arthritis is usually accompanied by reduction in the sedimentation rate and the shift to the left in the nuclear count.

(3) Drugs of the pyrazolon series (magnepyrine and pyramidon) were found useful as analgesics for the control of arthritic pain; and the particular two drugs employed were found roughly equivalent in effectiveness.

The authors wish to express their appreciation to Miss Marie Jordon, B. S., for her efficient technical aid in the laboratory work connected with this investigation.

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THE HEALING GODS OR MEDICAL SUPERSTITION*

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FOR countless ages medicine was an integral part of the religion of all races, and apparently united by inseparable bonds. Medical history shows that so closely was the practice of medicine interwoven with the development of theology the errors of the one are reflected in the mistakes of the other.

The inadequacy of the primitive mind to understand and cope with natural phenomena gave birth to the twin brothers, Faith and Superstition. Although the former may lead humanity to its sublimest ideals, the latter brings only a caricature of human knowledge. As primitive man, in his impotent attempts to analyze and understand the important processes of organic life, came to feel his absolute dependence upon some unseen force beyond his understanding and control, he created *faith* which found expression in various forms of religion, and *superstition* exhibited in an infinite variety of daily practices to meet his physical requirements. Consequently man's inability to explain the cause of disease and to cure it by natural means, has through succeeding generations erected an enormous structure of superstitions in reference to the prevention and cure of man's ailments, and the warding off of the dread approach of death. The wildest and most weird notions have prevailed and as a matter of fact, to a certain extent, still prevail in spite of our boasted civilization.

Magnus defines medical superstition as: "Belief that the normal as well as the pathological manifestations of organic life may be explained and eventually treated, without

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consideration of their physical nature, by means of supernatural agencies."

The people in their ignorance naturally turned to their priests and philosophers for explanation and help. All these supposedly learned men could offer them were fanciful guesses based upon their conception of some supreme powers ruling the universe and ordering the various events of human life. The most important things in life being birth, health, and death, thus acquired a religious significance, and medicine became intimately associated with theology. Mankind was injured or benefitted, punished or rewarded, according to the caprices of various supernatural agents.

Ethnology shows the universal similarity of these beliefs, which has been well stated by Col. Fielding Garrison as follows: "The mind of savage man, in its pathetic efforts to form religious and ethical systems for moral and spiritual guidance, or to beautify the commonest aspects of life with romance and poetry, has unconsciously taken the line of least resistance—followed the same plane of cleavage. The civilized mind differs from the savage mind only in respect to a higher evolutionary development. Human races and racial customs have changed as they became more highly specialized. The heart of man remains the same.

"It follows that, under different aspects of space and time, all phases of folk medicine and ancient medicine have been essentially alike in tendency, different only in unimportant details. In the light of anthropology, this proposition may be taken as proved. Cuneiform, hieroglyphic, runic, birchbark and palm-leaf inscriptions all indicate that the folk-ways of early medicine, whether Arcadian or Scandinavian, Slavic or Celtic, Roman or Polynesian, have been the same—in each case an affair of charms or spells, plant lore, and psycho-therapy, to stave off the effects of supernatural agencies."

The manifestations of these supernatural agents warring against man's health and life may be grouped as follows:

1. Disease or death as a punishment inflicted by some offended deity, whose malevolent spirit assuming animate or inanimate form attacked the victim, with or without provocation.

2. Disease caused by the evil spirit of some living or dead human enemy possessing supernatural powers such as sorcery, witchcraft, conjuring, or by the transference of their evil influence into some inanimate object as a tree, rock or spring.

3. Disease due to the evil influence of the planets or other heavenly bodies, around which was built the pseudo-science of Astrology.

Pathological conditions based upon such supernatural etiology are accordingly prevented or removed by similar means, so that the therapeutics of folk medicine may also be grouped under three general heads.

1. Magic medicine exhibited in various forms such as amulets, charms, fetiches, signs, weapon salves, etc.

2. Pharmacological medicine, which includes every known substance in the animal, vegetable and mineral kingdoms, all of which at some time or other have been pronounced efficacious in the preservation and restoration of health, an enormous number of these having ascribed to them specific or magical powers.

3. Psychic medicine, such as by incantation, exorcism, royal touch, music, hypnotism, laying on of hands, invocation before some holy relic or shrine, etc.

As would be expected, in the course of time, there sprang up a great host of gods governing every important human action and event, and not the least of these were the healing gods of every race, who were to be worshipped, and placated by every possible means, for as Canon Kingsley remarked, "bodily fear will be found at the root of all superstition whatever."

To attempt to mention even briefly the more important healing deities in the great pantheon of the primitive races and early civilization would take a longer time than we have for this paper, but there are a few who could be of great service to us in the practice

of our profession if we knew how to cultivate their acquaintance and invoke properly their assistance. Among the important of whom are:

The old Babylonian god Marduk who was "the expeller of all maladies."

The cat-headed Egyptian goddess, Bubastis, dealing out the blessing of fertility to women could be of great help in enlarging our practice.

Nor should we ever forget the oldest and most beloved of the Egyptian goddesses, Isis, noted for her broad protective influence over all diseased persons, but more especially those troubled with disturbances of the digestive tract, for whose relief she benevolently invented the clyster, so when you order an enema don't forget to offer a prayer to Isis for its efficient action.

Another beloved Egyptian goddess was Nekhbet, sometimes called Thoueris, "The Good Nurse", whose special duty was attendance upon childbirth. She is represented by this tiny blue glace figure on my watchchain, which was taken from the tomb of an Egyptian woman dying some twenty eight hundred years ago.

A most useful god to the modern physician was the supreme Babylonian god Ea, the last resort of the sick, who stressed the healing qualities of water. We should always invoke his blessing when prescribing baths and copious libations to our patients.

Modern medicine being the legitimate offspring of Greek medicine, we must never slight our own especial Greek gods, Apollo and his son Aesculapius, who is the more important of the two as he gave his entire attention to medicine, while Apollo divided his among a great number of interests.

Apollo, "the brightest and most complex character of polytheism" represented to the Greeks the highest type of mental enlightment, physical beauty and vigor, and moral purity. Frequently he is referred to as the "inventor of the healing art", although he is said to have brought disease as well as to have dispersed it, for when angry often he sent pestilence and death among men by his far-flung arrows, but was equally quick to stay an epidemic when soothed by music and "songs that sweetly please."

The Greeks gave him the title of "Supreme Divine Healer", but it would seem to be rather an honorary degree than one justly merited because most of the time he was too busy attending to his multitudinous duties as the god of light, agriculture, politics, music, poetry, adolescence, and sports, to say nothing of various other minor roles he played, to give much much attention to the healing art. However during slack times he delighted in taking a hand in cases where unusual difficulties attended the birth of some young mortal, but for the most part left the obstetrical work to his twin sister, Artemis, and to Aphrodite, whose duty it was to attend all such cases, as she was responsible for all matters pertaining to love and reproduction whether it was a question of the esthetic, physiologic, or pathologic part of passion.

There are numerous legends regarding the birth of Aesculapius, the real god of Medicine, who flourished some thirteen hundred years before Christ, the best of which are recorded by Homer and Pindar.

In his "Hymn to Asklepios" Homer writes: "I begin to sing of Asklepios, son of Apollo and healer of diseases, whom fair Koronis, daughter of Phlegyas, bare in the Dotian plain; a great joy to men, a soother of cruel pangs. Hail to thee, my lord, in my song I make prayer to thee."

Pindar makes a more poetic tale of the birth of Aesculapius, the first recorded secarean section, and relates that while Koronis was still carrying Apollo's illegitimate child, she fell in love with and married the Arkadian, Ischys, who was not of divine birth. Apollo becoming aware of this unchaste deed sent his vengeful sister, Artemis, to punish her with death; but when Koronis lay on her funeral pyre, Apollo, relenting, snatched the unborn babe from her womb, and

> "Away the struggling child he bare,
> And bade the Pelian Centaur sage
> Store its young mind with precepts rare
> Disease and mortal pain to 'suage."

Thus under the instruction of Cheiron on the slopes of Mount Pelio, Aesculapius became marvellously skilled in medicine, not only healing the sick, but also at time raising the dead. Because of these marvellous powers, Pluto made complaint that Aesculapius was desolating and depopulating the realm of the shades. Jupiter them slew him with a thunderbolt, but later, at the request of Apollo, he was placed among the stars and numerous temples erected for his services and the relief of man's ailments.

After centuries of religious domination by the organized priesthoods of all races, it was a descendant of Apollo and Aesculapius, whose critical observation of disease, scientific spirit, constructive thought, and ethical ideals made the first cleft between theology and medicine, and planted the seed from which has come all the later development in medicine and its allied sciences. Need I call the name of the Father of Medicine?—Hippocrates. The breach he opened has slowly but steadily widened through the efforts of succeeding generations of his enthusiastic followers tirelessly working with open analytical minds until now, after twenty-five hundred years, medicine and the other sciences have been able to break completely away from ancient authority and fanatical religious traditions and proceed with unhampered experiment, investigation, and the adoption of new principles.

It has been a long and bitter war. With the coming of the Christian era, the breach made by Hippocrates and his immediate followers, was almost closed, religion regained its strangle hold on the healing art and, in spite of the persistent struggle of medicine for intellectual freedom, retained its obstructing influence until the beginning of this century.

It is less than a hundred years since anatomical laboratories were wrecked by angry mobs, and a professor of obstetrics in an American medical college was vilified by the public press and arrested for daring to teach obstetrics to his class in the delivery room. We still have anti-vivisection and anti-vaccination societies, but they have lost their influence.

While contending against the domination of Christian theology, Medicine has also had to wage war on a vast horde of beliefs and superstitions the civliized world inherited from its pagan ancestry, and at the same time has had also to purge her own ranks of the pseudo-sciences of Astrology and Alchemy, and sweep into the discard the erroneous theories and speculations of her various schools in their attempts to explain the phenomena of physiological and pathological conditions. However we can be proud of the fact that various as these countless theories have been from the humoral pathology of Hippocrates to the parasitology of the 19th century, none of these schools of medicine acknowledged any supernatural influences as pathological factors, but assumed some material process of the body itself as the starting point of their speculations, even though at times the profession seemed to reek with superstition.

The lives of the outstanding physicians in the past prove that Medicine did not at any time in the last two thousand years voluntarily accord a home to the superstition of supernatural influences, but accepted only what it was compelled to by the powerful religious, philosophical, and popular thought of the age. It is a well known fact that single individuals, even when representing the truth, are powerless to divert and direct the mental currents of their own age, which resistlessly sweep aside whatever stands in their way. For example the truth-seeking, courageous resistance of Fracastorius and others in the 15th and 16th centuries to the absurdities of medical astrology were necessarily futile as it was the legitimate offspring of their pagan ancestry still holding irresistable sway over the popular mind.

What was more natural than the assumption that the heavenly bodies ruling the tides and seasons, should also govern the lives of men. So for ages no well regulated family would think of having its infants come into the world without the local astrologer being

present to read the heavens at the exact moment of birth and from this plot the future of the child. Old 16th century woodcut pictures of the lying-in room show the astrologer at the window or door reading the stars while the mid-wife is delivering the child across the room. Astrological prognostications appear in many medical texts even as late as the 18th century—but why criticize them when today we find educated, intelligent men and women consulting modern astrologers about all their important undertakings, and columns of the daily press filled with the horoscopes of their subscribers.

Most of our modern farmers consider no almanac worthy of notice that does not picture the astrological man whose body is governed by the signs of the Zodiac. He will not plant certain crops, shingle his house, castrate or butcher his hogs, or submit himself or family to any needed elective operation, except *the sign* be in the right place.

Southey's humourous description of this sign man in "The Doctor" is worthy of repetition. He wrote: "There Homo stands, naked but not ashamed, upon the two Pices, one foot on each; the fish being neither in air nor water nor upon the earth, but suspended as it appears in a void. Aries has lighted with two feet upon Homo's head, and sent a shaft through the forehead into the brain. Taurus has quietly seated himself across the neck. The Gemini are riding astride a little below the left shoulder. The whole trunk is laid open, as if part of the old accursed punishment for high treason had been performed upon him. The Lion occupies the thorax as his proper domain, and the Crab is in possession of the abdomen. Saggitarius, volant in the void, has just let fly an arrow, which is on its way to his right arm. Capricornus breathes out a visible influence that penetrates both knees. Aquarius inflicts similar punctures upon both legs. Virgo fishes, at it were, at his intestines. Libra at the part affected by schoolmasters in their anger, and Scorpio takes the wickedest aim of all."

The old belief that the planets under which a man happened to be born made his disposition grave or gay, lively or severe, has left a lasting impress upon our language as shown when we speak of a man as jovial, mercurial or saturnine, and refer to his actions as ill-starred, martial, etc. The terms lunacy and lunatic are but the acknowledgment of the old superstition that insanity was caused by some evil influence of the moon. When we speak of critical days and discharges in rendering a prognosis, or calculate the menstrual cycle and period of gestation we acknowledge the ancient astrological teaching. The sign at the beginning of our prescriptions goes back to the days when every physician in prescribing invoked the assistance of Jupiter in curing his patient as it is the sign of that god modified to conceal it from the early Christian fathers by placing the straight line in front giving it the appearance of the capital "R", and explained as the initial of the Latin "recipe"—to take of.

Even as late as 1796, the celebrated Erasmus Darwin (grandfather of the great Charles) said: "That anyone who would deny the influence of the sun and moon on the periods of quotidian, tertian and quartan fevers must deny their effect on the tides and on the seasons." It is still common to hear impetigo contagiosa spoken of even by physicians as "dog-day sores" because of its prevalence during the forty days that the dog star Sirius is in the ascendency.

Evil Spirits:—From the beginning of recorded history down to 1933 we have records of the belief in disease and death caused by the malevolent action of some devilish god or conjuring human. The Bible gives many examples of insanity, epilepsy and other forms of disease accounted for as being "possessed of devils" and their marvelous cure by some holy one "casting out the evil one". It is solemnly taught from some pulpits today that the devil is watching and waiting for an opportunity to take actual possession of persons not publicly embracing Christianity, and illustrated by some horrible modern examples of what he can do.

Formerly it was believed that every natural object contained some good or evil spirit, and

that multitudes of them wandered disembodied in the air.

Even the great John Wesley believed their action as a part of God's punishment to the human race for the apple episode in the Garden of Eden, as shown by the following quotation from his book on "An Easy and Natural Method of Curing Disease." He said: "And how is the number of these diseases increased, by every Thing about us. The Heavens, the Earth, and all Things contained therein, conspire to punish the Rebels against their Creator. The Sun and Moon shed unwholesome Influences from above; the Earth exhales poisonous Damps from beneath; the Beasts of the Field, the Birds of the Air, the Fishes of the Sea, are in a state of Hostility: The Air itself, that surrounds us on every side, is replete with Shafts of Death; Yea the Food we eat, daily saps the Foundation of Life, which cannot be sustained without it."

The exercise of these evil spirits was frequently exhibited through the supernatural powers conferred upon some living human being as witches, sorcerers, and conjurers. Even though no witch has been publicly burned for two hundred years, belief in them still exists to a considerable extent in every civilized nation, as witness the practice of the negro conjurers in the South; the belief in "Black Magic" firmly held by a vast number of German-Americans in Pennsylvania, where only a few years ago an old man was murdered to obtain a lock of his hair to break a spell that he was supposed to have cast on a certain family; and the daily fear of the Southern Italian in the malignant effects of the "Evil Eye"—for example I have never been able to convince the husband of an Italian patient of mine who died a few years ago of leukemia that her death was not due to having been bewitched by a harmless old colored woman whom the Italian had offended by calling her a negro. Any crowd of Italians from Naples and Sicily can be quickly dispersed by some Italian crying "jettatore" (witch with the evil eye). Each as he runs will be making a potent sign behind his back to ward off the evil influence, namely, closing his thumb, second and third fingers with the index and little fingers extended, just as the negro in times of stress fingers his rabbit's foot. Practically every southern Italian woman whom I attend in confinement, whether she was born in Italy or is of the second generation in the United States and a graduate of our high schools, has pinned to her breast by the side of the scapulary of St. Anne, the patron saint of parturient women, a little bunch of gold or coral ornaments to ward off the "evil eye". Many of these are heirlooms that have been handed down for generations. As soon as the baby is dressed they are transferred to its breast where they remain for several months, for the mothers all dread the evil "jettatore di bambini", or fascinator of infants. These charms vary in number and variety according to the wealth of the family. I have seen a dozen or more in one group, each of which has its special significance. There are two that must always be in each group, they are the hand making the sign I mentioned, and a horn like the horn of a Texas steer, which has always been considered a most potent charm against witchcraft, the hand charm as you will note gives a crude imitation of a horned animal. The other amulets commonly included are either an anchor or dolphin, dating back of course to the time when Neptune was worshipped by maritime races, and a three branched sprig of rue, traced to an early Phoenician origin, but later associated with Diana Triformis, the especial goddess of infants. A crescent moon, her later emblem may be substituted for the rue. A cornucopia is also a commonly included charm and every group includes some very grotesque figure, such as a humpbacked armless drawf, because its grotesqueness may attract the person with the "evil eye" away from staring at the baby. It it said that the same idea was back of the gargoyles built into the mediaeval cathedrals, and even today some Neapolitan churches have hanging in them many of these amulets built on a large scale and occupying as prominent places in the church as do the various Catholic shrines.

Many persons of every race even today are firm believers in the efficacy of amulets or material charms to protect against real and imagined dangers of disease and accident. These potent charms are made of an infinite variety of substances such as peculiarly shaped roots, seeds, pebbles, teeth, claws, gems, bones, metals, carved or written prayers, meaningless words and symbols. Much of the jewelry that we wear today is directly descended from ancient charms worn by our ancestors as a protection against disease. Religious mottos such as "God protect our home" are derived from the same source, just as the modern Hebrew and Moor in Asia and Africa press the open hand in the plaster above their doors to ward off malignant spirits. The old Romans drove nails into their doors as an antidote to the plague, and many ancient houses in Edinburgh have cabalistic symbols engraved on their fronts for the same reason. There is hardly a small American community where you will not find a horseshoe nailed over some of the doors. Some writers interpret this as a survival of the old Phallic worship and the horseshoe's fancied resemblance to the vulva, but I rather think among Christian nations it came into use through its conventional resemblance to the arch formed by the blood placed on the door posts and arch during the rite of the Passover as recorded in Exodus.

As examples of the supernatural powers ascribed to certain gems and common natural objects still believed in and practiced by many good American citizens let me mention:

Peony roots either carried in the pocket or worn as a necklace as a good prevention against insanity, epilepsy and convulsions.

A buckeye, or a potato carried in the pocket as a sure prevention of rheumatism.

The patella of a sheep worn next to the skin during the day and placed under the pillow at night is both a prevention and a cure for muscle cramps.

A leather strap that has been part of a horse's harness buckled or laced tightly around the wrist greatly strengthens it and prevents sprains.

No doubt I had measles, scarlet fever, chicken pox, mumps and whooping cough after I outgrew Mammy Harriet's services because my mother did not permit the little red flannel figure stuck with the five potent pins against these diseases to remain under the mattress of my bed.

It is not uncommon to see some American infant wearing a necklace of "Job's tears" (a vegetable bead) to make his teething easy, or coral or ambler beads to prevent the croup. I am sure most of the older men here have seen children wearing bags of asafetida about their necks as a prevention against contagious diseases. In 1919 I heard one of the best known physicians of this state, say in all seriousness in a public discussion of the Influenza epidemic we had just come through that he and his family avoided getting it by eating an onion a day. He became quite indignant at the humorous skepticism of some of the other members of the State Medical Association.

It is only a few years back that red flannel underwear was regarded as a sovereign remedy against colds and rheumatism, being twice as effective as white, and no case of tonsillitis could last long after the throat was bound with it, all of which dates back to the time when red as the strongest color in the spectrum was considered as a specific in smallpox and other eruptive diseases, even if it did fail in preventing the death of Emperor Francis I as late as 1765. Avicenna in the 10th century seems to have originated the idea. Perhaps future genreations of medical men will laugh over our use of the aniline dye preparations and recall the great surgeon Moorhead's remark that surgery is becoming more chromatic than traumatic at present. Long before the days of Hahnemann, Spanish saffron, because of its color, was regarded as a specific in the treatment of icterus neonatorum, and today it is still an important part of many layettes in my part of the country.

Most of us who are familiar with the customs of rural West Virginia know that many an infant suffering from malnutrition or rickets, familiarly known as "the decay" or

the "gobacks", must be measured by some old woman before he will get better, which is much more certain and less expensive than cod liver oil and tomato juice. Another sure cure for this condition is to split the trunk of a sapling where it forks, pass the child through the cleft, which is then bound up. When it grows shut the child will be cured.

Most every community in the south has some old negro who has the power to charm warts off and blow fire out of a burn. I have known of children passed three times under the belly of a horse, or carried through a coal mine to cure whooping cough. If you have a child troubled with bronchial asthma don't give up the case as hopeless until you have tried backing him against a tree and pegging a lock of hair from his crown into a gash cut in the tree. When the bark grows over it he will surely be cured. Of course you cut the youngster loose when the hair is securely fastened. I have seen a frantic search made for a neighbor's greasy dishrag with which to rub the face of a child in convulsions, while another neighbor held salt in his clenched hands—my enema and chloroform being merely incidental measures while the miraculous cure was being effected. In another case the death of the child from bronchopenumonia was considered due to the fact that the mother would not permit a neighbor to tear off and burn a new shirt she had just put on him before the terminal convulsion took him off. As late as 1808 a French physician published a book on his cure of hernias by binding on them poultices of snails.

Every precious and semi-precious gem is supposed to be endowed with many magical properties in the prevention and cure of disease, the recording of which fills several volumes.

Rubies were said to warn their owner of attempts at poisoning him by losing their color. They also purified his blood of such things as cholera and snakebite, and cured him of epilepsy, certain forms of insanity, and prevented pulmonary hemorrhage in tuberculosis.

Emeralds also warned of attempted poisoning, prevented epilepsy, cured dysentery and greatly assisted women in child-birth. To those who could afford to grind them up and take as a cordial they gave great strength. Only recently a London dealer offered for sale a receipt signed by Queen Isabella of Spain for a square cut emerald which she had taken ground up as a cordial during her illness at Granada.

The topaz, coral and jasper possessed the common property of checking hemorrhage, driving away anger, melancholia, strengthening the lungs, aiding indigestion, and when powdered and drunk in wine of relieving gravel, dropsy and other kidney affections.

Should any of you be needing an aphrodisiac be sure to get and wear a ring set with onyx. You will also find it useful to lend to your obstetric patients during delivery as it is also a powerful oxytocic, and will save you much time, and the cost of pituitrin. Another most useful amulet for the physician is the common amethyst, which sharpens the intellect and dispels sleep. It also prevents intoxication, as witness old Pliny, who says: "being bound on the navel it restrains the vapour of wine and dissolves inebriety." It also promotes chastity in women who wear it.

Speaking of chastity, the sapphire, because of its coldness possessed the same quality, hence was especially suited and demanded for ecclesiastical rings. Even the great Galen administered vinegar in which a sapphire had been soaked to cool his fever patients. It also was potent in the cure of carbuncles and other purulent infections.

Even as late as the 17th century pearls were commonly used in the treatment of insanity in wealthy patients, although the daily administration of a decoction of powdered pearls in distilled water failed to cure the insanity of King Charles of Spain. The Chinese still have faith in them as an aphrodisiac and as a remedy of excellent value in stomach troubles and hemorrhages.

Amber, supposed to be generated out of the urine of the lynx and hardened by time, has from remotest antiquity been regarded as a sovereign remedy for all throat affections,

asthma, croup, toothache and goiter. Its prophylactic action in these troubles is even today highly regarded by many woman who still wear amber beads to prevent goiter.

As I look over this audience I see that many have sadly neglected one of the most valuable of the older specifics, namely Magnetic Iron ore. Powdered and made into an ointment with lard from a young hog and used on the scalp it is an absolute cure for baldness. If those that are over indulgent in food and liquor will only carry a lump of it in their pocket they will never be troubled with cramps or gout. Every obstetrician should carry a lump in his bag to lend to his patient to hold in her hand during labor as it is much more efficient than the ax under the bed commonly used by the negro in such cases to cut the pain. According to old Leonardus it is most valuable to married couples having marital troubles, and our divorce courts would have much less work if more people knew about it, for as Leonardus says: "It taketh away fears and jealousies, and reconciles wives to their husbands and husbands to their wives."

During the plague in London in 1665 amulets of arsenic or mercury were commonly worn next the heart with the faith that they would destroy the poison of the plague.

Superstitions of Childbirth:—As in ancient times, childbirth still carries with it many superstitions, and working as I have for a third of a century among a large number of different nationalities I have encountered a wide variety of these superstitions, among which are the following:

On several occasions I have been requested by some country midwife to leave at least a hand's breadth of the navel cord attached to the male infants that their sexual organs might have proper development, and to cut close that of his sister to limit the growth. Even as late as the 17th century this superstition appeared in some textbooks on midwifery. Two of the most common requests are to count the large whorls or knots in the cord as an indication as to the number of children to expect in the future; and to be sure to rub the placenta over any birth mark the infant may have to remove it or render less conspicuous.

When I tell the husband to burn the placenta I often meet with opposition on the ground that the mother will have a backache until she becomes pregnant again, consequently the disposal of the secundines in the winter when the ground is frozen to the depth of a foot or more is no easy task. Even when properly buried the mother's lochia is supposed to continue until the placenta has completely rotted away.

If some evening you are detained from an important bridge session by a case of dystocia you might try what is said to be a quick remedy for a speedy delivery. It was told to me by a doctor friend who did some relief work a few years ago in the "Free State of McDowell." He was called to attend the wife of a young mountaineer in her first confinement. Although everything was normal, the tardy progress of the case finally worried the old mother-in-law who was acting as nurse. After dark she called the doctor to the front porch of the cabin, handed him a large spoon, pointed out the evening star and requested that he call the husband out, have him face the glowing Venus and void in the spoon which was then to be given to his wife. The old woman said she had found it a never failing means of producing a quick delivery.

Among a certain class of Russians I have had to take care of there is an even more disgusting belief, that is that after labor begins intercourse with the husband will bring a speedy and easy delivery, and in a few slow cases I have been asked to permit it.

One of the most common superstitions found among all nationalities is that the patient's hands over her head will retard labor.

Should you ever be consulted for the relief of sterility, after other means fail, try taking your patient to your next confinement case and as soon as the infant is in his receiving blanket hand him to her with the solemn assurance that she will have one of her own within a year. I have two amusing incidents

of this kind, although neither one wanted her sterility relieved. While attending a case the patient's sister-in-law was present although not in the capacity of nurse. She had one child about six years old and I had been joking her about not having any more, to which she had replied that one was all she ever intended having and I wasn't taking any more to her. When the baby was born the nurse happened to be out of the room so I handed the baby to the other woman and to carry on the joke, assured her that I had put the hoodoo on her and she would surely have another within a year. She did become pregnant within a month and I almost had to leave town. The other case was similar except she had been married about two years with no babies and the determination not to have any, but about ten months after bewitching her I was called to deliver her. These two cases for a while ruined my getting any help from a young woman at a confinement case for I might as well have tried to hand them a snake as to hand them the newly-born infant. Perhaps it is through such foolishness that some of these superstitions are passed on, for nothing will ever convince either of these women that I did not conjure them into becoming pregnant.

Should you ever have trouble with a retained placenta before trying manual interference have the patient put on your shoes and walk about the room, and don't forget to put your hat on her head to prevent undue "wasting." I have been assured by old Scotch midwives that this will surely do the trick.

We are all familiar with the superstition regarding the child born with a caul over the face, and that this dried and carried by anyone else will enable the owner to foresee and forestall the evil intentions of an enemy. During my senior year in Richmond the negro dining-room servant at our boarding place begged each of us save it for him should we have such while attending our out-patient obstetric cases. At last one of the fellows finally brought Sam a large piece of membrane from one of his cases. I don't know how much protection it afforded Sam, but from that time on Rogers received all the choicest food at each meal.

There are inumerable superstitions connected wtih the first year of the child's life, some of the more common being: that he will be stunted or die young if his clothes are put on over his head during his first year; if his nails are cut before he is six months old he will die before he is six years old or steal if he survives; cutting his hair or permitting him to see himself in a mirror before his first birthday will cause his death; putting your hat on his head makes his teething difficult. When you are called to see a baby that has fallen off the bed, and find no damage done, you can comfort the mother with the knowledge that a baby that has never fallen off a bed will never be reared, but it is wise to warn her that since he has now complied with this necessary requirement it would be well to prevent his continuing in the practice of this feat.

When it comes to sure fire pharmacological specifics of past ages, such things as powdered mummy, moss from a human skull, chips of a gallows on which a felon has been hanged, crabs' eyes, human excretions, unicorn's horn, bezar stones (intestinal concretions found in some deer), and other revolting remedies, the past hundred years has relegated to the discard, but we all know many absurd specifics still in use in some communities. As a few examples of which permit me to mention: a snakeskin belt and snakeoil inunctions at potent remedies for lumbago and arthritis; old fashioned brown paper soaked in vinegar and bound on the forehead brings speedy relief from most headaches; the finest way to cure a sty is to rub it with a gold ring, and weak sore eyes are quickly cured by daily bathing them with human milk, and may be prevented by wearing gold earrings; nosebleed is stopped by a key dropped down the back, a silver coin under the upper lip, or letting the blood fall on an ax or knife and then sticking the blade in the ground before it dries. It may be prevented by wearing a necklace of coral or red corn kernels, or a red yarn string on the little finger. Skunk oil is a specific for

croup; and mumps and "waxen kernels" are rapidly cured by inunctions of the marrow of a two year old hog jowl. We have all heard of people madly racing hundreds of miles to some famous "madstone" to prevent hydrophobia. Erysipelas and "shingles" are quickly cured by rubbing the eruption with blood from a black cat's tail, which must then be nailed to a door until the patient is well. Fortunately for the cat they cut him loose from the tail as it would be a most awkward position for him if the patient did not recover rapidly. Vomiting may be stopped by drinking tea made from elder bark peeled downward, and reversing the direction of peeling makes it an emetic. A nail wound in the foot will never produce lockjaw if the nail is greased and carried in the pocket until the patient recovers. The familiar "stone bruise" of barefoot days is relieved by binding on it a live toad with the abdomen split open. The pain and poison has been drawn out by the time the toad dies. If your measles cases do not produce the eruption qucikly feed them a tea made from sheep manure. Those of you practicing in town should always keep a supply on hand by gathering it on your country drives. And now for the most valuable prescription in the entire folk-lore therapeutics, one that most doctors will take personally. It is—the next time you get a cold or grippe hang your hat on the bedpost and proceed to drink whiskey until you see two hats and you will be speedily relieved.

These examples might be extended to many hundreds and not include all of the specific folk remedies still believed in and used by many people today, as most any doctor with a country or small town practice will tell you.

We naturally expect to find in America the survival of a wide variety of "Old World" beliefs and superstitions, settled as it was by many races and nationalities. They are widespread and involve almost every social strata, in spite of our tremendous advance in education and culture, but naturally are found more concentrated in the various backwaters of the nation, as exhibited by the survivals of African demonology among the southern negroes; Greek and Roman mythological beliefs and practices in the Italian centers of our industrial states; old Saxon folk-medicine still current among the descendants of the English and Scotch settlers in the mountains of the Virginias, Carolinas, Kentucky and Tennessee; Teutonic witchcraft in central Pennsylvania; Gallic priest-lore among the Creoles of Louisiana; and a polyglot mixture of Arabian, Iberian and Aztec magic medicine still adhered to by the Spanish and Indian inhabitants of the southwestern states.

As said before superstition is not alone the inheritance of the ignorant but to a certain extent is found among all classes. For example I knew a Vassar graduate who would not begin any work on Friday that could not be finished that day. Even many educated persons believe that night air is bad for the health, pus in a wound means you have "caught cold in it", boils are an infection from the blood, malaria is more likely to come from foul miasmic air than from mosquitoes, bathing is dangerous in acute diseases, sleeping in the moonlight causes insanity, and so on ad infinitum.

Some of the greatest minds of the past could not rid themselves of medical superstitions that had come down to them. For example: Martin Luther who revolutionized the religious world wrote, "experience has proved the toad to be endowed with valuable properties. If you run a stick through three toads, and after having dried them in the sun, apply them to any pestilential tumor, they draw out all of the poison and the malady will disappear." John Wesley another great religious reformer highly recommended pills made from a toad for a "Dry Convulsive Asthma". He wrote, "dry and powder a toad and make it into small pills and take one every hour till the convulsions cease." He states that he never knew "six middling pills of cobwebs" to fail in curing a tertian ague, and they are to be repeated in a week to prevent a relapse. For quartan malaria he recommended a plaster of salt and July Wall Flowers applied to the sutures of the head,

and a turpentine plaster to the wrists. Lord Bacon, who did for the intellectual world what Luther did for the religious, had the warts on his hands removed by rubbing them with a bacon rind which was then hung on a tree to rot in the sun, and recommended as the quickest cure for a wound the rubbing of a weapon salve on the instrument that had inflicted it. The great scientist Robert Boyle advised the powdered thigh bone of a criminal that had been hung as the best cure for a dysentery. The famous Dr. Johnson was "touched" by Queen Anne for the cure of his tubercular glands.

The great attention now paid by medical men to psychotherapy makes it appear as a discovery of the twentieth century. Scientifically speaking it is, but in reality it is the oldest form of healing and has been practiced from the remotest antiquity by the primitive medicine men, the pagan and Christian priests, and the successful physicians of past generations.

The ancient Greek physicians, besides instituting a proper hygienic regime, effected their most spectacular cures by means of their temple rituals and practices. The Jews, as heirs of the old Assyrian civilization, were firm believers in certain diseases being the manifestation of the possession of the patient by some evil spirit, who was miraculously driven out by exorcism, or music, as when David cured Saul of melancholia by the sweet tones of his harp.

Herbert Spencer says: "Opposed to paganism as Christianity was from the beginning, we might naturally suppose that the primitive association between the priestly and medical functions would cease when Christianity became dominant. But the roots of human sentiments and beliefs lie deeper than the roots of particular creeds, and are certain to survive and bud out afresh when an old creed has ben superficially replaced by a new one. Everywhere pagan usages and ideas are found to modify Christian forms and doctrines. The primitive theory that diseases are of supernatural origin still held its ground, and the agency of the priest consequently remained needful . . . Concerning the substitution of Christian medical institutions for pagan ones, it is remarked—"The destruction of the Asclepions was not attended by any suitably extensive measures for insuring professional education, and the consequences are seen in the gradually increasing credulity and imposture of succeeding ages, until, at length, there was an almost universal reliance on miraculous interventions."

The early Christian church quickly saw the value of such a connection, and the prestige that such cures gave to the church, so from the very beginning began to build up a great pantheon of medical saints and shrines by which to work marvelous cures. Thus for centuries we find the monks practicing medicine along with their priestly duties and effecting thousands of spectacular cures by prayers, exhibition of holy relics, and pilgrimages to special shrines, showing that neurasthenia, hypochondria, and mental aberration are not products of our modern civilization, and that psychotherapy has and always will be an important part of the healing art. Succeeding generations have added more and more to this pantheon, and even today we read of some newly canonized saint or established shrine for the curing of afflicted humanity, as witness the testimony of hundreds that they were cured of their various ailments by making a pilgrimage to the grave of a New England priest who died a few years ago. Probably the most famous of the older shrines is that of "Our Lady of Lourdes" in France, where the hosts of pilgrims from all parts of the world annually report thousands of cures.

Since kings are supposed to rule by divine right they also for many centuries were thought to be able miraculously to cure certain diseases by touching the patient. While not confined to any ruling house or any nation, the English kings from Edward the Confessor down to the Georges were the most famous sovereigns practicing this divine right. It is said that King Charles II touched more than ninety thousand of his subjects for tuberculosis and scrofulous glands. To make the cure more certain the king presented to

each patient a gold "touch piece" which was to be worn suspended around the neck. I have one of the Charles II pieces to show you.

A pilgrim returning from Jerusalem presented King Edward with a holy ring which he claimed was given him by St. John, the Evangelist, who reappeared on earth to bestow this great blessing on mankind. It was supposed to have magical power in the curing of epilepsy, one of the evil spirit diseases—the Greek original of the name means "to seize upon". Just before he died in 1066, A. D., King Edward gave the ring to the Abbot of Westminster, where it is still enshrined. From it came the custom of the English kings on Good Friday solemnly blessing rings made from the gold and silver coins of their own offering to the church. The rings then were sold to epileptic patients as a potent cure for their diseases. At late as 1794, after the custom had been abandoned by the king, nine young men in an English parish subscribed a sixpence each to be blessed and moulded into a ring for the cure of a friend with "fits"; and in 1815 the London Medical and Physical Journal reports the successful cure of epilepsy in a young lady by wearing a ring made from coins contributed by twelve of her girl friends.

As Jayne says in his "Healing Gods of Ancient Civilizations": "Throughout all history of human progress, from the primitive state to the higher intellectual levels, the race has shown a strong conservatism of opinion, and an ever constant tendency to cling to old beliefs and customs, while tentatively accepting newer conceptions prompted by a broader, better knowledge of the workings of nature's laws, upon which advances in civilization have been based." So we are not surprised to find many persons in every community rejecting the modern ideas of disease and treatment and clinging to their inherited belief in the divine or supernatural origin and relief of human ills. These are the people who spend nearly a billion dollars a year in the United States for patent nostrums and swallow the extravagant claims put forth by their vendors as being derived from the superior knowledge of some old Indian chief, mediaeval doctor, or saintly priest; who found and carry on the numerous cults of today that attract thousands of followers, many of them form the educated and more intellectual classes.

In my opinion, the teaching and practice of such organizations as Christian Science (?), with its fundamental denial of the physical existence of disease; the Chiropractic School with its theory that all human ailments are to be cured by the harmonization of misplaced vertebræ; the Pentacostals, or Holy Rollers, curing by faith in prayers spoken in an "unknown tongue"; other sects with similar beliefs; and the miraculous cures reported by the thousands of pilgrims annually to the traditional shrines of antiquity, constitute the greatest impediment to the practice of modern medicine.

In the future, as it has been in the past, the medical profession must be one of the most important factors in the education of the people away from these superstitious beliefs, and we must do it by coming into closer contact with them than we now do. Unfortunately the direction taken in medical education in the 20th century with its enormous grouping of the practitioners into hospitals and clinics has made the profession almost forget the *art of medicine*. In the rapid progress made in medical research the scientific side of medicine has been so stressed and the aesthetic side so neglected that not only the layman, but also most of the younger generation of physicians have come to look upon the practice of medicine as merely a technical business.

The neglect on the part of many doctors to have and exhibit any interest in the life of their patients other than the immediate case before them, or in other words to acquire a knowledge and sympathetic understanding of the inner life of their patients and their reactions both in health and disease is often the deciding factor between the doctor's success and failure. In my opinion this is one of the fundamental causes back of patient's "shopping around" from one doctor to another and

finally drifting into the hands of the charlatans, because he misses something, intangible though it be.

Last fall Dr. David Wilson of the University of Virginia in addressing the Medical Society of Virginia aptly summed this up as follows:

"The patient should be treated and not the disease. There are not diseases, there are only sick people. There is a person present as well as a diseased organ. The physician should know this person that he must treat, certainly as well as the symptom complex that he is treating, or as well as the life cycle of the organisms that are causing the disease. Not knowing the personality, how can he heal it or even recognize when it is whole?

"Experience undoubtedly does bring the physician this ability in a great measure. The greater this characteristic is possessed the greater the physician is said to be schooled in the art of medicine, that power which allows him to sense the total situation."

While, as Dr. Wilson says, experience is an important factor in acquiring this power, my observation is that a large number of splendidly educated younger physicians make no effort to lay the foundation for building up this power, or in other words they make no effort to leave anything of themselves with the patient other than their medicines, to take away anything from the patient other than his apparent disease and his money.

It is my belief that by a happy combination of the art of the older physicians with the science of the younger, medicine will better fulfill its mission in the world, win a greater measure of the confidence and support of the people, and drive fewer of them into the camps of the irregulars for relief, by our having fewer failures when they come asking us as did Macbeth:

"Canst thou not minister to a mind diseased,
Pluck from the memory a rooted sorrow,
Raze out the written troubles of the brain,
And, with some sweet oblivious antidote,
Cleanse the stuffed bosom of that perilous stuff
Which weighs upon the heart?"

Only by developing and using all the powers at our command, instead of stressing one to the exclusion of the others can we claim to be true "healers of the sick", for many ills of the human race have no pathology that can be demonstrated by our most delicate instruments of precision, which may prove fatal, or as Chaucer expressed it:

"Man may die of imagination
So deep may impression he take."

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HOW TO APPLY FIRST AID

"Every boy should know how to give first aid to the injured, for every boy sometime may have a chance to help in saving some one's life," Alfred E. Parker begins Chapter IX of his series, "Training for Athletics and Health" in the September issue of *Hygeia.*

"In truth," he continues, "an understanding of first aid means that you know how to determine the seriousness of that accident, that you send for a doctor, that you stop the bleeding, that you restore breathing and that you make the injured person as comfortable as you can."

THE MANAGEMENT OF BENIGN PROSTATIC OBSTRUCTION*

By HOWARD L. TOLSON, M. D., F. A. C. S.,
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ALTHOUGH the problems presented by the benign obstructing prostate are as old as the world itself, they have not been satisfactorily solved. The etiology, pathology and management are particular phases which have been most difficult to definitely settle and during comparatively short periods there have occurred marked revisions of views concerning these phases. The neoplastic origin has been abandoned and recently the inflammatory hyperplastic explanation of benign hypertrophy has been giving way to the endocrine dysfunction hypothesis.

The history of the treatment of prostatic obstruction is a highly interesting one. Various methods have been developed and abandoned. During the 19th century blind instrumental transurethral incision and excision methods were in vogue. The instruments of Mercier, Bottini, Freudenburg and Chetwood were extensively used until the early part of the twentieth century when suprapubic and perineal prostatectomy displaced them. During the past ten or fifteen years there has been renewed interest in instrumental excision methods. The punch instruments of Young and Caulk and cystoscopic electric cutting instruments of Collins, Stern, Davis and McCarthy are among the many instruments that have been developed during this period. Insufficient visualization and lack of a means to control bleeding were the two chief objections to the instrument of Young. Without interferring with the advantages of Young's punch I endeavored to overcome these two objectionable features. In 1924 I devised a special diathermy electrode to control bleeding and later I attached the Cameron urethroscope light. The electrode and method of providing hemostasis were described in the Journal of Urology, July, 1925[1] and in September, 1931[2]. In 1925 Stern introduced a prostatic resectoscope which is a cystoscope equipped with a wire loop that cuts by means of a cautery current. At present prostatic resection is being extensively employed with consequent reduction in the number of prostatectomies. The instrumental excision methods, although originally introduced to relieve the minor vesical outlet obstructions, have come into use for the relief of larger obstructions.

The wide spread prevalence of prostatism makes the condition highly important. It has been estimated that twenty to twenty-five percent of men beyond fifty years of age have a prostate sufficiently enlarged to be producing obstructive symptoms. The condition, although of particular interest to urologists, should also have the attention of internists and general practitioners. With the knowledge at hand, hypertrophy of the prostate is not preventable but the advanced stages and serious consequences are preventable. Herein lies an important phase of preventive medicine. It has been common practice to advise against operative treatment until complete retention demanded relief. By the time patients have reached this stage, the prostate may be enormous, the bladder musculature impaired and the cardio-renal system may also be damaged. In such instances the complete removal of the prostate by prostatectomy is frequently the only measure that will adequately relieve the obstruction. Weeks or months of preliminary treatment may be necessary to get the patient in operable condition. In the earlier stages many of these patients could have been satisfactorily relieved by some form of urethral prostatic excision. Transurethral prostatic resection methods have been developed to a point

*Original Paper.

where they are safe and give satisfactory results in properly selected cases. It appears that patients with prostatic obstructions should be advised to have early conservative operative treatment rather than postponed radical surgery.

If early treatment is to be advised, it is necessary that more attention be given to the early symptoms of prostatism. The prostate hypertrophies very slowly and consequently the early symptoms are mild and few. Unless there is adequate arrest the process is progressive and the symptoms become more marked. Many patients with slight prostatic enlargement have no complaints referable to the urinary tract. The prevalence of prostatic pathology demands that the prostate be examined routinely in all men beyond 45 years of age. The information obtained by rectal palpation is not sufficient to determine whether there is obstruction. Patients with large prostates may have no obstruction to urination and on the other hand patients with rectally small prostates may have marked obstruction. According to Young[3], rectal palpation gives a correct impression concerning the size of the prostate in about thirty-nine percent of cases. Measuring the residual urine by passing a small rubber catheter after the patient has voided gives much more reliable information. Among some of the early symptoms and signs that should lead to the investigation of the prostate are: frequency, hesitancy, increasing effort to start the flow, diminution of the calibre and length of the urinary stream, decreasing force of the stream, interrupted or intermittent flow, increase in time required to void and incomplete relief after voiding. The prevalent notion that frequent, difficult urination is a necessary accompaniment of advancing years should be abandoned.

The treatment of prostatic obstruction may be divided into medical and surgical. It is hardly possible to over-emphasize the importance of proper medical care. With the exception of hyperthyroid patients, it is probable that no other types of surgical patients require as much medical supervision and judgment as do the patients suffering from prostatic obstruction.

Patients with mild degrees of prostatic obstruction, patients being prepared for operation, prostatectomy convalescents and inoperable patients require medical care. Medical care alone may suffice in dealing with mild degrees of prostatic obstruction. Such patients need advice regarding proper hygiene, rest and diet. While good general health is maintained a slightly obstructing prostate may be the cause of no harmful effects. During attacks of prostatic edema, the local application of heat by rectal irrigation, diathermy or special electric hearters has value. Massage is to be avoided when there is edema of the prostate. Radium and deep x-ray therapy have been found to have little value in the management of benign hypertrophy. Patients who persistently carry two or more ounces of residuum should consider surgical treatment.

During the preparation for operation patients are often ill and present various medical problems. Postoperatively, constant medical vigilance is necessary. Frequent examinations of the vascular and respiratory systems are required.

Ample nursing care is most important postoperatively. Special and well trained nurses are most helpful during the first few days after prostatectomy. Good nursing care should be properly credited for its share in lowering the prostatectomy mortality rate.

In discussing the surgical treatment I wish to present a series of 150 consecutive patients I have operated upon to relieve prostatic obstructions considered benign preoperatively.

TABLE I—TYPE OF OPERATION

150 consecutive patients with benign prostatic obstruction.

80 prostate enucleations.....53 1-3%
76 one stage — suprapubic
4 two stage — suprapubic

70 patients managed by resection.....46 2-3%
44 with modified Young's punch
26 with McCarthy resectoscope and Davis-Bovie unit.

For the series the ratio of resection to enucleation was 47:53, but for more than a year

a considerably higher proportion has been managed by resection.

The series started in 1924 when I began use of Young's punch equipped with the previously mentioned diathermy electrode. In order to remove larger amounts of tissue I have also used the McCarthy resectoscope with the Davis-Bovie surgical unit. Although the series is small it may have some interest in the comparative evaluation of prostatectomy and transurethral resection.

TABLE II — ANESTHETICS

80 Prostatectomies		70 Resections	
Spinal novocain	79	Caudal novocain	26
Gas-ether	1	Spinal novocain	28
		Morphine, hyoscine and local	16

The choice of anesthetic is highly important. I am convinced that nerve block analgesia definitely lessens the frequency of postoperative complications. In this series of 150 patients, inhalation anesthesia was used only once for the removal of a prostate from a dwarf, aged 68, three feet, eleven inches tall and weighing 60 pounds. Difficulty in the determination of the proper dose of novocain intraspinally prompted the use of gas and ether in this case.

TABLE III — AGE BY DECADES

Prostatectomy Group 80 Patients		Resected Group 70 Patients
40-49		2
50-59	11	14
60-69	42	34
70-79	26	13
80-89	1	7

Seventy-six or about one-half of the patients were in the seventh decade at the time of operation. No patient under fifty years of age was subjected to prostatectomy, whereas two under fifty were resected. Seven, or ten percent of the resected patients, were over eighty years of age, and I believe that not one of these could have been safely prostatectomized. A considerable number of the resected patients in the other decades were entirely unfit for prostatectomy and perhaps a few of them should have been considered unfit for any type of surgery. The resected group included many more poor risks than did the prostatectomy group.

TABLE IV

Time in Hospital After Operation

After Prostatectomy		After Punch Operation or Resection	
Shortest	16 days	2	days
Average	23½ days	8½	days

The average postoperative hospitalization of the resected group was about one-third as long as the prostatectomy group. With few exceptions the prostatectomy patients were voiding without suprapubic leakage at the time of discharge from the hospital and the average postoperative hospitalization of 23½ days is perhaps short for the reason that an inlying catheter was used in most instances. From an economic standpoint the advantage of resection is quite apparent. A few of the resected patients have required hospital postoperative care for considerably more than the average of 8½ days. Edema of the remaining portion of prostate and marked impairment of the bladder musculature were among the causes of prolonged hospitalization.

TABLE V — RESULTS

150 PATIENTS

Prostatectomy Group		Resected Group
Recovered	75	67
Died in hospital	5	2
Died during domiciliary convalescence	0	1
Mortality rate	6.25%	2.85%* 4.28%†

†Hospital and Home.

*Hospital.

Seventy-five or 93.75 percent of patients subjected to prostatectomy recovered. At one point there were 42 consecutive prostatectomies without a death. In most instances the improvement in general health was prompt and comparatively few patients required attention to the urinary tract after leaving the hospital. Some required treatment for persistent pyuria. Two patients had operative closure of persistent suprapubic fistulæ. Permanent urinary incontinence did not occur in any patient. There were five hospital deaths following prostatectomy. The chief causes of death were as follows:

(1) Uremia, 3rd day, age 63.
(2) Pneumonia, 18th day, age 80.
(3) Uremia, 18th day, age 69.

(4) Bronchopneumonia, 3rd day, age 75.

(5) Sepsis, thrombosis femoral and iliac veins, 40th day, age 59.

It is difficult to report accurately the results following instrumental resection. Uniform results cannot be obtained from a method applied to patients ranging from age 50 to age 85 presenting various degrees of obstruction and wide variations in general health. Some of these patients had permanent urinary tract pathology which rendered a good result impossible. In general it may be stated that patients with small and moderate sized obstructions obtained satisfactory results. Patients with very large prostates often had excellent results even when the amount of removed tissue seemed small in proportion to the size of the entire gland. The patients with very large prostates who have had resection as a compromise for prostatectomy have for the most part been improved to a degree that renders catheter life unnecessary. Such patients usually appear well satisfied even though the relief obtained is not so complete as that following prostatectomy.

Three patients resected with the modified punch were unsatisfactorily relieved and were subsequently relieved by prostatectomy. These have been included in the prostatectomy tabulation.

In 1931 I was able to follow up 32 patients I had resected with the modified punch. Twenty-one of the patients considered themselves satisfactorily relieved and a few of these have now been satisfactorily relieved for 8 years. Recently I have done repeat operations on two patients who had been relieved six years and five years respectively.

Sixty-eight patients left the hospital after being resected and two died; a hospital mortality of 2.85%. It is appreciated that these figures may carry an incorrect impression. The resected patients usually require little care after the first postoperative week and they are allowed to spend the balance of the convalescent period at home. Such patients cannot be considered as recovered when discharged from the hospital and mortality figures should include patients that are lost during the domiciliary convalescent period. In this series one patient died at home twenty-one days following resection. This patient who had been ambulatory in the house suddenly collapsed and died. His physician

Photographs show the range and amounts of prostate removed by resection in the various grades of prostatic obstruction; four grams to thirty-three grams. Each tube or bottle contains the pieces of prostate removed at one sitting. The bottles are four ounce size and the tubes have a capacity of twenty-two cubic centimeters.

considered death due to a heart attack. The resection may or may not have been responsible for the death but it is probable that embolism secondary to thrombosis in the region of the bladder was the cause of the fatality.

Including the patient who died at home the mortality rate was 4.28%.

The chief causes of death following resection were:

(1) Acute dementia, myocardial degeneration, 4th day, age 70.

(2) Bronchopneumonia, 10th day, age 81.

(3) Probable embolism, 21st day, age 59 (died at home).

The amount of tissue removed by resection varies with the size of the obstruction. An attempt has been made to make a deep gutter in the prostatic urethra by removing portions of the median and lateral lobes. Instrumental removal of all visible prostatic tissue is not feasible or necessary. Approximately 33 grams of tissue is the largest amount I have removed at one sitting.

In the resected group there was no postoperative bleeding sufficient to require opening of the bladder. One patient required cystoscopic fulguration to control bleeding eight hours after operation, and another required the same procedure 23 days after operation. Incontinence did not occur in any case.

TABLE VI

Biopsy Diagnosis

Prostatectomy Group		Resected Group	
Benign	76	Benign	65
Carcinoma	4	Carcinoma	5

Patients with palpable changes in the prostate, suggestive of carcinoma, were resected; this accounts for the higher incidence of carcinoma in the resected group. I have not included in the report patients with sufficient palpable changes to permit a definite carcinoma diagnosis.

Conclusions:—1. Transurethral prostatic resection is the method of choice in relieving minor forms of vesical outlet obstruction, i. e. contractures, bar formations, slightly or moderately enlarged median lobes and small lateral lobes.

2. By doing more extensive resections, removing larger amounts of tissue, and by doing multiple operations in some instances the transurethral method may be successfully applied to patients with large hypertrophied prostates. It is not a method of choice, however, in dealing with the very large or grade 4 type of enlargement.

3. Fifty percent or more of patients who present themselves for the relief of benign prostatic obstruction can be satisfactorily relieved by instrumental resection.

4. Complete enucleation of the prostate remains the operation of choice in cases with very large prostates provided the patients are in operable condition.

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PRINCIPLES OF ANATOMY

"Before one may expect to teach the subject of reproduction to one's children, one should be thoroughly grounded in the elemental principles of anatomy and physiology by virtue of which the miracle of life begins," Dr. Thurman B. Rice begins the fourth of his articles on Sex Education in the September number of *Hygeia.*

In his article, which is addressed to parents, he does not propose to go into detail in describing either the male or the female reproductive organs but to give parents some idea of what they need to know to be able to answer fully and honestly the questions of children in regard to sex.

Throughout his explanations, Dr. Rice shows by comparison how much more highly developed are the organs of reproduction in man than in the lower forms of life and describes particularly the care which the baby receives both in the prenatal and in the postnatal period of life.

He points out in addition that parents are usually speculative regarding the sex of the unborn child. Many attempts to control sex have been tried, but none has yet succeeded.

Dr. Rice maintains that there are three proper functions of the reproductive system in man: (1) the production of the bringing together of the sex cells; (2) the production of the child and his protection before, during and after birth, and (3) a means whereby a man and wife may express affection for each other and on that solid foundation build a home which is, in turn, the foundation of society.

THE CONFESSIONS OF AN OBSTETRICIAN*

By NORMAN R. PRICE, M. D.,
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I AM moved to write by the receipt of a questionnaire from the Committee on the West Virginia White House Conference on Child Health and Protection. I take exceptions to several of the questions because of their categorical nature, and not answerable intelligently except at length. For the rest, they are mainly statistical. All recent graduates are presumed to be expert gynecologists and obstetricians, but unfortunately there are many things in the practice of the art that are only learned in the school of experience. Undoubtedly there are those among us who are specially fitted by nature and industrious application to excel in this vitally important field.

Prior to my graduation in 1903, I had seen possibly twelve cases of labor in the maternity hospital and in the out-service department. In that early day internships were few and those reserved for the favored few destined for specialization, or those who felt they could afford the time and added expense which a year's internship involved. On entering practice almost at once I found myself in demand as an obstetrician, and, as I recall that distant day, it seems to me I was remarkably successful. Knowing little to do, I did nothing very radical, giving the patients plenty of time, and nearly all cases happily terminated to the satisfaction of all parties concerned. In the first six months of practice I encountered the first and only set of triplets, that I have seen. My reputation as an expert accoucher grew and in a remarkably short time thirty-five babies were named for me in this community. Growing more confident of my skill, by reason of experience, and the demands of a fairly busy practice, I am sure harm was done in many cases by too precipitate use of instruments or by podalic version, these being the usual cases of lacerations of the cervix and perineum, and in some instances intracranial injury to the infant.

In two cases I recall injuries to the brachial plexus because of too much traction in delivering the head in breech presentations, one of which recovered fully from the resultant paralysis; also the fracture of an arm and a leg of an infant in the maneuvers accompanying a difficult breech or podalic version. In both cases the infant lived and apparently suffered no bad results from the fractures.

According to the historian Josephus, the ancient Jewish midwives were adept at performing podalic version, and it was their manipulation of choice in all difficult labors. He says indeed that so confident were they that they frequently terminated the ordeal in this way merely to shorten labor. At the birth of the twins, Jacob and Esau, the latter was a shoulder presentation no doubt terminated by version of the attending midwife.

Undoubtedly much harm has been done by the indiscriminate use of pituitrin, especially when as a new advance in materia medica its use was not fully understood by the rank and file of the profession. Used judiciously in indicated cases it undoubtedly helps to terminate labor where instrumentation or other manipulation would have been resorted to. The newer preparation combined with the active principle of the thymus gland is undoubtedly a safer and more effective agent.

I have seen women die in childbirth of eclampsia; usually preceded by a more or less acute nephritis, and not a mere "albuminuria of pregnancy," which the older writers did not appear to regard with much concern. I have also seen deaths from post-partum hemorrhage (placenta previa), which to my mind is the most lamentable experience ever encountered in the practice of medicine. Fre-

*Read before the Greenbrier Valley Medical Society, March 10, 1933.

quently an apparently normal labor develops grave symptoms of one or the other form of hemorrhage.

I have seen septicemia and sapremia in the lying-in patient. In all of the literature on the subject it has struck me as peculiar that writers lay so much stress on external infection of the parturient, and so little on latent infections, chronic salpingitis, cervicitis nad the like. Verily, the infections classified as venereals have worked much woe to the human race. To my mind their menace is far greater than the much touted tubercular infections, and harder to manage. State sanitary laws have failed in this instance almost as lamentably as those prohibiting alcoholic liquors. Moses, while in command of the Israelites in their forty years' march from Egypt, prescribed capital punishment for sexual promiscuity, and other very detailed laws regulating the sexual function, particularly of women. We have no statistics about just how far he succeeded in reducing the percentage of gonorrhea, which archaeologists and anthropologists tell us was very common among the heathen Egyptians and contributed materially to their racial degeneration and extinction as a virile and conquering people. The island of Corsica has the lowest birth rate per thousand of population. There are many unmarried women who are still in a state of subjection. The young men emigrate, and among the young women, although exceedingly fecund, illegitimacy is rare. The hair-trigger Corsican, with a high sense of family honor, speedily and effectually resents any irregularity of this kind.

However, civilization is said to owe much to the tubercle bacillus and the spirocheta pallida.

Very properly, the medical profession is concerned with the better care of women in childbirth and a reduction of the percentage of mortality to both mother and infant, which remains disconcertingly high in this country. Efforts put forth such as those contained in the Shepard-Towner Act of the Federal Congress do little or no good, even as propaganda, and possibly do harm as most congressional interference does in the affairs of the people by shifting responsibility from those to whom it properly and solely belongs. I refer to those in active field service in the practice of medicine. Hospitalization in all cases is not the answer, at least not yet in our present state of economic advancement. Personally, I see no reason why the vast preponderance of childbirths should not be quietly and successfully terminated in the home. I have been present at many births in the wilds of Pocahontas and adjoining counties of which I had had no preliminary notice, and did not see the patient subsequently—owing to difficulties in reaching them due to bad roads and distance. Most have lived through the ordeal, however, and even the offspring grew up to beget sons and daughters. My father was born in this county in 1830, the late William Thomas Price, D. D. Among his published papers he left a biographical sketch of a famous midwife of those days who attended at his birth and was quite a character, an indomitable woman named Diana Saunders. At his birth he was thought to be dead, as he was long in showing animation, but was revived by Mrs. Saunders blowing breath into his body through a goose-quill, and he lived to the unusual age of 91 years, the first of fourteen in his father's family.

In thirty years' practice, I have attended approximately 2000 cases of labor. The sum of all this experience is to give the patient in normal labor plenty of time. The hard-working, self-reliant woman, willing to do her part in rearing a family, usually gets along well in her labors. The peppy young women, highly educated, of the present day should do even better, except for the increasing tendency to avoid maternity. No matter how well prepared technically the young modern physician may be to care for the parturient women, nothing will take the place of gentlemanly conduct, tact and sympathetic understanding of the problems of each patient.

It has been my custom to give Norwood's Tincture of Veratrum Viride in eclamptic seizures, and I always carry it for this emer-

gency. Enormous doses (one to two cubic centimetres) are given subcutaneously or intra-muscularly, with definite and favorable results; a dropping of the pulse to below sixty, and control of convulsions after two or three seizures, in most cases, is attributable specifically to the action of the drug alone.

The Journal of the American Medical Association for February 25, 1933, carries a review of Professor Bland's recently issued *Obstetrics*, and condemns his mention of veraturm viride in the treatment of eclampsia, as a dangerous drug which has fallen into desuetude. I object to this verdict, because it is a valuable drug the use of which should be better known to the present generation. It may be given by mouth or hypodermically. When the tincture is used hypodermically it results of course, in some local inflammation, but I have seen no bad results from its use in this manner. The tincture or the alkaloid of veraturm may be used, though personally I prefer the tincture, having learned its use and value many years ago. This drug is of very definite value in controlling the racing pulse in certain types of pneumonia. To my mind it has definite value in helping to overcome the toxemias, not explainable to me, except its use is accompanied by a definite diuretic and diaphoretic action and moistening of the mucous membranes in febrile conditions.

I will conclude with a quotation from Rudyard Kipling's "The Female of the Species:"

"But the Woman that God gave him, every fibre of her frame
Proves her launched for one sole issue, armed and engined for the same;
And to serve that single issue, lest the generations fail,
The female of the species must be deadlier than the male."

HEALTH EDUCATION

William Arlis Richards in an article in the September *Hygeia*, "Now When I Went to School," points out in a constructive manner the advantages school children of today enjoy over those who attended the one-room rural school thirty years ago.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

In a recent number of Tuberculosis Abstracts, Dr. Esmond R. Long summarized the papers presented before the Pathological section at the annual meeting of the National Tuberculosis Association held in June, 1933. In this issue, Dr. Iago Galdston of New York renders a similar service by pointing out the high lights of the discussions of the Clinical section.

CLINICAL PROGRESS IN TUBERCULOSIS

In reviewing the clinical material presented during the 29th Annual Meeting of the National Tuberculosis Association, one is deeply impressed with the fact that the "reaping" stage in tuberculosis progress is now passed and that we have entered upon what might be called the "gleaning" stage.

The advances which we have witnessed during recent years in tuberculosis are largely the result of careful combing of old territories, of critical evaluation and of more skilful application of techniques and procedures which in some instances have been known to us for several decades.

Advances in Lung Surgery—As an illustration of this, we may take the marked advance which has been made in the application of surgery in the treatment of pulmonary tuberculosis. Heretofore surgical treatment of tuberculosis of the lungs has been a rather rare procedure, applied only when other methods failed to produce the results desired. Nowadays surgery is as common as any other form of treatment and is used in conjunction with the rest. In some institutions, as many as 70 per cent of the patients are surgically treated.

The surgical procedures consist of pneumothorax, phrenicotomy, apicolysis, and thoracoplasty. Is it not illuminating that the oldest of these procedures, pneumothorax, was originally suggested by Forlanini in 1882, the very same year in which Robert Koch revealed the tubercle bacillus? The other surgical procedures, with which the names of Sauerbruch, Archibald, Alexander, and others are associated are also of relatively long standing. These procedures have been known for years but only recently have we begun to apply them with any measure of frequency.

This more frequent and wider application of surgery to tuberculosis of the lungs is undoubtedly due to the general progress which has been made in the field of surgery. The improvements in x-ray technique, the wider choice of anesthetizing agents, and better general surgical technique render surgery in the treatment of tuberculosis of the lung comparatively safe and markedly effective.

Tuberculosis Among Negroes—Progress in this field was reported by Dr. Henry D. Chadwick, *et al,* in a paper entitled "Collapse Therapy in Treatment of Pulmonary Tuberculosis in Negroes." This paper was based on a study of 464 Negroes having pulmonary tuberculosis who were hospitalized during the period from January, 1931, to September, 1932.

Treatment consisted of bed rest supplemented by collapse therapy procedures, which were used in 70 per cent of the cases. Of the patients discharged 28 per cent were arrested and 58 per cent died, but, including those who are still under treatment, favorable results were obtained in 53 per cent. This is an excellent record when we note that on admission 23 per cent were moderately advanced and 67 per cent far advanced, or 90 per cent had advanced beyond the minimal stage before treatment began.

Tuberculosis Among Indians—A very solid proof of the effectiveness of the anti-tuberculosis measures now furthered by our tuberculosis societies was presented by Dr. R. G. Ferguson in his report on "The Indian Tuberculosis Problem and Some Preventive Measures." According to Dr. Ferguson, in 1931 there were 672 deaths from tuberculosis among the Indian population of Canada. This number represents a tuberculosis death rate of 547 per 100,000, a rate seven-and-one-half times the average for the total population of Canada. By the application of standard anti-tuberculosis measures on the Qu'Appelle Indian Health Unit, it was possible to reduce the tuberculosis death rate of this group of Indians to approximately one-half of that rate for the Indian population of Saskatchewan.

Fungous Infections—Returning again to our original thesis, namely, that we have come to the "gleaning" stage of tuberculosis, we may use as a further illustration, the excellent contribution that was made by Dr. David T. Smith of Durham, North Carolina, on the "Diagnosis and Treatment of Common Fungous Infections of the Lungs."

For more than two thousand years, from the time of Hippocrates to the time of Lænnec, physicians were at a loss to differentiate between true tuberculosis and those other morbid conditions of the lung which give clinical signs and symptoms closely resembling those of tuberculosis.

Lænnec with his stethoscope and with his clinical description of the tuberculous process as shown in the cadaver of post mortem, singled out tuberculosis and separated it from other conditions. However, to this very day, we find tuberculosis confounded with other pathologic conditions and notably with fungous infections of the lung. The fungous infections of the respiratory tract represent a field in which much study remains to be done. As Harry P. Jacobson so aptly says in his recently issued volume "Fungous Diseases—A Clinical Mycological Text:" "It is not at all extravagant to predict that the immediate future holds in reserve a respectable place for the science of mycology—a place commensurate with the importance of the clinical problems which the pathogenic vegetable fungi are known to cause."

On the diagnostic side of tuberculosis and related conditions of the chest, progress has been made in the field of bronchoscopy and in the wider and more skilful application of the x-ray.

Dr. Louis Hamman's paper on "Malignancy of the Lungs and Pleura" and Dr. Kirklin's paper on "Röentgenologic Diagnosis of mediastinal Lesions" dwelt upon this phase of the subject.

An extremely interesting contribution was presented by Dr. Leo Eloesser of San Francisco, California in his paper, "Bronchial Stenosis in Pulmonary Tuberculosis." This represents a phase of lung pathology which has not heretofore been much appreciated. Dr. Eloesser's paper, which was beautifully illustrated, made an impressive discourse on the subject.

The papers of Doctors Chadwick, Hamman, and Eloesser will appear in forthcoming numbers of the *American Review of Tuberculosis.* Papers or abstracts of the papers of Doctors Smith, Ferguson, and Kirklin will be published in *Transactions of the National Tuberculosis Association, 1933*

PRESIDENT'S PAGE

The organization of the regular medical profession of our country is based upon a very simple plan. The physicians in each county constitute the County Medical Society. The State Medical Association is made up of the component county societies. In turn, the state associations constitute the American Medical Association.

Fundamentally the most important link in this chain is the county medical society. Sometimes physicians make the mistake of assuming that we may expect the American Medical Association to exercise a dictatorship and prescribe rules and regulations for the conduct of our local affairs. Conditions of practice are so different in the various sections of our country that it is impossible to set up a comprehensive code of fair practice which is equitable for all the members of our profession. It is obvious, therefore, that the ultimate authority for the regulation of professional affairs rests with the county medical societies.

It is very necessary that we realize the importance of the county medical society and that each physician bend every effort to make his particular county medical society an efficiently operating unit. This is the time of the year when every doctor should be thinking: "What kind of a program will our society have this year, and what can I do to contribute to its success?"

The meetings should be held regularly and every effort should be made to obtain a full attendance. Our intelligent lay friends look upon the medical society as a postgraduate course for physicians. They know that there is something wrong with the doctor who doesn't attend the medical society meetings. We know that in order to keep abreast of the developments in the medical world, and maintain the keen edge of our clinical enthusiasm, it is necessary for us to attend medical meetings regularly. It is a good thing to publish in the newspaper the names of those present, when reporting a medical meeting.

Every county society has its problems in medical economics. Two or three meetings each year should be set aside for the discussion of such subjects. Some of the questions to be discussed relate to local problems only, but many others pertain to matters of general interest. We are entering a new era in social and economic relations. Our profession is confronted with the prospect of many profound changes in the manner and type of medical practice. From the discussions in the county medical societies ideas and opinions will be conveyed to the state societies through the delegates to the state conventions. In turn the American Medical Association will be able to summarize and crystallize the ideas of the entire profession after receiving delegates from the state societies. Your county medical society should contribute its part to the composite picture.

At least half of the scientific programs should be presented by home talent or by speakers from sister societies within our own State. There is no greater stimulus to study and research than the preparation of a medical paper for presentation before your colleagues. The best way to stultify the medical talent of your society is to depend upon speakers imported from distant cities for most of your programs. Another argument against this practice is the fact that it is quite expensive to secure such speakers. Paying the freight on imported entertainment makes medical society dues unnecessarily high.

We should try to make it easy for honest and capable physicians to belong to their county medical societies. It is next to impossible to find a really successful physician who has attained his position outside the pale of organized medicine. The county society is the fundamental unit in the organization. No other medical society membership is quite so important. Realizing this fact, every doctor should pledge unfailing loyalty to his own county society, and cheerfully coöperate with the officers responsible for its successful management.

D. A. MacGregor
President.

THE WEST VIRGINIA MEDICAL JOURNAL

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A FORM OF RECIPROCITY

In the past eight years the West Virginia Medical Journal has collected more than $40,000 in advertising revenue. That amount has been spent with the medical profession of this state in an effort to interest the doctors in ethical and reliable products marketed or manufactured by ethical and reliable firms. Of this $40,000, almost one-fourth has been put aside as your profit. It makes up a goodly portion of the financial strength of the West Virginia State Medical Association.

This Journal, comparatively speaking, is one of the best money-makers in the entire field of American medical journalism. Even during the worst days of the depression the Journal was not only able to keep its surplus intact but to continue to build it up. Apparently the advertising pages of the Journal bring results; otherwise this unusual financial record could never have been realized.

Advertising in this Journal pays because we have so many interested readers who favor, whenever possible, the firms and institutions that use our advertising pages. This is quite a simple and easy thing for any doctor to do. It costs nothing, and yet it pays dig dividends. We do not ask that our doctors blindly follow the Journal advertising pages but we do suggest that our advertisers be given preference when other considerations are about equal. These advertisers of ours support organized medicine in West Virginia so let us, in turn, make a practice of supporting them. If even 50 percent of our Association members would follow this suggestion the Journal would soon be able to carry almost the entire financial burden of maintaining the West Virginia State Medical Association.

SOUTHERN MEDICAL MEETING

With every prospect of a banner meeting, the Southern Medical Association moves on to Richmond for its next annual convention, beginning on the 14th and extending through the 17th of November.

Probably at no time in the history of the nation has solidarity of effort and thorough accord of spirit been more necessary than at this moment when the clouds of the devastating depression seem to be breaking. The physicians of the South, always alert to opportunities and obligations, can do their part just now in no more effective way than by bringing to one another the stimulus that flows from the companionship, from the broadening of ideas, from the actual dissemination of new thought that always mark the sessions of this organization.

It seems fitting that this girding of the medical forces of the South for the New Day that is dawning should occur in the capital of the Old Dominion, the focal point of so many stirring events in the history of the United States. Today a metropolitan area of wide dimensions and a medical center of real note, Richmond is filled with memorials of great names and greater deeds that, along with its natural beauties, lend it a charm equaled by few other American cities. To these physical and historic embellishments it adds a warmth of hospitality that assures a genuine welcome to the Southern Medical Association.

In behalf of the profession, the Richmond Academy of Medicine has extended to the physicians of the South a cordial invitation to attend the twenty-seventh annual session of the Southern Medical Association. General and sectional programs have been admirably arranged and the clinics and scientific exhibits will offer demonstrations of lively interest. Local committees will spare no effort to con-

tribute to the comfort and convenience of the delegates and such guests as may accompany them. The social diversions offered by the city will be very engaging and the points of interest here and in the surrounding territory will lead into many delightful byways.

MEDICAL AID TO THE INDIGENT

The Federal Emergency Relief Administration has recently issued a pamphlet (Rules and Regulations No. 7) governing medical care provided in home to recipients of unemployment relief. We have already called attention in past issues to the manual of regulations sent out by the West Virginia Department of Public Welfare on the same subject. The West Virginia manual provides a fee schedule of $1.00 for home calls, 50 cents for office calls, mileage at five cents per mile and $10 for confinement cases.

The federal bulletin, as well as the state manual, recognizes the ethical principals of the medical profession. No effort is made to restrict the individual from free choice of physician and no effort is made to compel the individual members of the profession to accept the fees allowed for emergency medical aid to the indigent. For the benefit of the county medical societies that have not yet dealt with this problem, we quote from the federal bulletin as follows:

"State and local relief administrations shall request the presidents of the state and local medical organizations to designate a committee to advise them in the formulation and adoption of adequate programs for medical care in the home for indigent persons. The relief administrations shall be responsible for the final adoption of such programs. The medical advisory committees can assist these administrations in maintaining proper professional standards and in enlisting the cooperation of the constituent, professional membership in such programs. The appropriate professional advisory committees should be consulted by relief administrations with regard to disputed problems of medical policy and practice."

In covering the regulations governing medical care to recipients of unemployment relief a uniform policy is made the basis of an agreement between the relief administration and the organized medical profession. This agreement by the relief administration must "recognize within legal and economic limitations the traditional family and family- physician relationship in the authorization of medical care for indigent persons in their homes."

The Indiana State Medical Association, which has a fee schedule identical with that of West Virginia, has recently submitted two separate plans to its constituent county medical societies. The first covers payment on a fee basis in accordance with the actual service rendered. The second plan calls for payment on a unit contract basis, and is suggested for communities in which the fee basis is not practicable. "In such communities an effort should be made to agree upon a reasonable total cost to the relief agency for all medical relief needed for the ensuing month. When that is done, individual payments would be made on a unit basis. If, for instance, an office call was agreed on as the base unit, the officials and physicians would then agree upon what number of units to assign for any other form of medical aid. Physicians would report the number of units of medical service given within the month. At the end of the month the total number of units of service would be divided into the total appropriations for the month to determine the amount to be paid for each unit of service.

"If such a plan is used, at the close of the month when reports have been received and payment made the relief agency should check the figures to ascertain just what amount has been paid per office call, per home call, etc., and if it finds these rates excessive or inadequate, the appropriation for the ensuing month should be gauged accordingly."

While both of these plans furnish one more step toward state medicine in one form or another, we feel that the "unit payment" plan is the least evil of the two. At least

it relieves doctors of the necessity of cutting their fees to an absolute minimum. It is not so bad in times of stress for an individual physician to occasionally lower his fee for an individual patient, but we are afraid that a wholesale reduction such as we find in organized medical care for the indigent will take a long time to live down.

This JOURNAL has only the highest regard for the Federal Emergency Relief Administration and we do not question its motive in attempting to provide medical service for the unemployed. Indeed we appreciate the spirit which prompted the F. E. R. A. to direct a portion of its funds to the medical profession. In spite of this, however, we cannot warm up to the idea of federal or state fees for individual practitioners of medicine. It looks too much like the beginning of a state system of medical practice.

BUCKING THE ASSOCIATION

During the past four or five months the West Virginia State Medical Association, through a specially appointed committee, has been working with the new administration in an effort to secure the best possible medical appointments for the various state institutions caring for the sick. The special committee was appointed at the suggestion of the administration and already some excellent results have been accomplished. The committee's recommendations have not always been followed but they have always received the utmost consideration and, with but few exceptions, the Committee has played an important part in the various selections that have already been made. It should be made clear that this Committee has acted only in an advisory capacity.

The only difficulty encountered by the special Committee involved individual endorsements and recommendations made by individual physicians direct to the administration. In most cases these individual recommendations coincided with the recommendations of the Committee. In some cases, however, the individual recommendations played havoc with the Committee's work and greatly lessened its influence. We are not advocating any blind allegiance to the Association or to any of its committees but we do feel that many of the individual recommendations that were made direct to the administration should have been made to the special Committee. Had this been the case, the Committee would have been able to function much more smoothly and efficiently.

We realize, of course, that the Association can never hope to secure 100 percent coöperation from its membership in a matter of this kind. Too many factors are involved. Friendship and courtesy and personal regard can't always be thrown overboard when a doctor asks one of his confreres to give him a letter of endorsement for a political appointment. On the other hand we know there were many cases during the past five months in which individual doctors sent flowery recommendations to the administration when they personally did not believe a single word on the typewritten page. We know this is a fact because more than a score of doctors have told us they sent in such letters.

This is the first time in many years that the Association has been asked to assist in selecting the personnel for the various state institutions. In setting up our new and inexperienced machinery for this bit of work, we could hardly expect maximum effectiveness or maximum coöperation from the Association membership. Too little time was available for educational work along this line. In spite of this the Committee not only has succeeded in bringing about a number of excellent appointments but has created an active public sentiment throughout the state for placing all medical appointments on a merit rather than a political basis.

In extending our congratulations to the special Committee, we wish to make this plea for a more earnest and sincere cooperation between the individual doctors and the Association. We are not complaining about the past, but we are looking toward the fu-

ture. We can accomplish much more for the profession and for the people of West Virginia by pulling together at the wheels of progress than we can by rolling individual hoops.

HONOR TO WEST VIRGINIA

Dr. Sobisca S. Hall, Fairmont, brought honor to the medical profession of West Virginia when his case histories and records took the highest honor before the American College of Surgeons at its recent annual meeting in Chicago. As a reward, Dr. Hall was given a life membership in the College. This is the first time such an honor has been won by a West Virginia doctor.

The significance of Dr. Hall's record is even more appreciated by the fact that there were more than 5900 applications presented at the Chicago meeting. Out of this number, 620 were accepted and out of the 620, five were given honorable mention. Dr. Hall was then announced as the highest of the five and was called to the stage by President William D. Haggard, Nashville, who cited Dr. Hall as a leader of the younger surgeons of America.

To Dr. Hall we extend our heartiest congratulations for his splendid work. We are proud of his fine record and proud that he is a member of the West Virginia State Medical Association.

OBITUARY

DR. GEORGE L. PEIRCE

Dr. George Leedom Peirce, 61 years of age, died at his home in Elkins on September 26 following a short illness of diphtheria. He was one of the best known physicians in Randolph County and was one of the most active members and workers in the Barbour-Randolph-Tucker Medical Society.

Dr. Peirce was born at Reading, Pennsylvania, on January 14, 1872. Following his preliminary education, he was graduated from the medical department of the University of Louisville in 1894 and located at Elk Garden in Mineral county the same year. In 1901 he joined the medical corps of the United States Navy, resigning in 1915 to locate at Belington. In 1917 he volunteered in the Army medical corps and served as a Captain throughout the World War.

After the war Dr. Peirce took post-graduate work at the Presbyterian Eye, Ear, Nose and Throat hospital, Baltimore, and then located in Elkins where he resided until his death. He is survived by his widow and two sons.

DR. G. L. WYATT

Dr. Girlonza L. Wyatt, 59, of White Sulphur Springs died suddenly at his home on the morning of October 1, 1933. He had been ill for only a few days. Dr. Wyatt was graduated from the College of Physicians, Baltimore, in 1903 and located in West Virginia the following year. He moved to White Sulphur Springs about 25 years ago where he built up a good practice and interested himself in many county and civic projects, serving at one time as a member of the county school board. He is survived by two daughters.

COUNTY SOCIETY NEWS

OHIO COUNTY

Dr. Robert T. Miller of Johns Hopkins University, Baltimore, was the guest speaker at the October 6 meeting of the Ohio County Medical Society which was held at 8:30 o'clock at the Ohio Valley General Hospital. His subject was "The Surgical Treatment of Pulmonary Tuberculosis." Discussion was led by Dr. George Vieweg, Dr. John Gilmore, Dr. Russell Bailey and Dr. R. U. Drinkard.

Two motion pictures furnished through the courtesy of the American Journal of Cancer featured the October 20 meeting of the Ohio County Medical Society which was also held at the Ohio Valley hospital. The first film was entitled "Cancer of the Skin," and the second, "The Technical Methods in Cancer Research." Dr. William T. McClure, President, presided at both sessions.

RUSSELL C. BOND, *Secretary*.

KANAWHA COUNTY

Major J. W. Fox, M. D., of the chemical warfare division of the United States Army was the essayist at the October 10 meeting of the Kanawha Medical Society which was held at 8:15 o'clock in the Public Library building, Charleston. Major Fox gave a very interesting presentation on the subject of "Irritant Gasses," with special reference to the pathology and therapeutics of this class of

trauma. His talk was illustrated with lantern slides and brought out considerable discussion.

Dr. Otis Marshall of the first aid service of the American Red Cross was also present and talked briefly on Red Cross first aid, particularly in regard to coöperation between his organization and the medical profession.

M. F. PETERSEN, *Secretary*.

FAYETTE COUNTY

A fine meeting of the Fayette County Medical Society was held at the Hill Hotel, Oak Hill, on the evening of October 10 with a good attendance. Dr. W. P. Bittinger, President, presided and the first part of the meeting was given over to an interesting discussion of economic problems.

The essayist of the evening was Dr. William R. Laird, Montgomery, who gave a very interesting paper on "A Resume of the Etiology and Pathology of Acute Appendicitis," which was generally discussed by those present.

RALPH HOGSHEAD, *Secretary*.

LOGAN COUNTY

Dr. A. E. McClue and Dr. Foard of the U. S. Public Health service were the speakers at the October 24 meeting of the Logan County Medical Society which was held at the Hatfield-Lawson hospital, Logan. There was a good attendance and both Dr. McClue and Dr. Foard gave interesting talks on public health work.

Dr. McClue devoted his address to the mutual problems of the medical profession and the health department. Dr. Foard talked on somewhat the same subject from the standpoint of the federal government. Their talks were freely discussed and many questions asked by the members present.

F. E. BRAMMER, Secretary.

CABELL COUNTY

Dr. William W. Strange, for the past several years secretary of the Cabell County Medical Society, was elected President at the October 12 meeting and will serve during the coming year. He succeeds Dr. W. Byrd Hunter. Dr. I. I. Hirchman was elected Vice-president of the society, Dr. Edwin Matthews, Secretary, and Dr. R. M. Bobbitt was reelected treasurer. Following the election of officers a short business session was held and plans were inaugurated for the annual meeting of the State Association in Huntington next spring.

EDWIN MATTHEWS, Secretary.

CENTRAL WEST VIRGINIA

An interesting and well-attended meeting of the Central West Virginia Medical Society was held in the Rotary Club rooms at Buckhannon on the evening of October 25. A fine banquet was served to the members and their wives and guests, following which the scientific program was presented. The essayists of the evening were Dr. S. L. Cherry of Clarksburg and Dr. E. T. Hall of Weston. A number of business matters were also disposed of.

C. C. CARSON, Secretary.

PARKERSBURG-CABELL

A joint meeting of the Parkersburg Academy of Medicine and the Cabell County Medical Society was held at the Elk's Club, Parkersburg, on Thursday evening, October 5, with a fine attendance from both organizations. A fine dinner was served and afterward the scientific program was presented.

The essayists of the evening were Dr. F. C. Hodges and Dr. J. H. Steenbergen, both of Huntington. Dr. Hodges presented two interesting cases of sudden cardiac death. Dr. Steenbergen talked on "The Office Practice of Gynecology." Both of these papers were freely discussed by the members and guests in attendance.

There were 22 members of the Cabell County Medical Society present and 50 members of the Academy present.

MERCER COUNTY

Dr. A. E. McClue, State Health Commissioner, was the principal speaker at the regular monthly meeting of the Mercer County Medical Society which was held at Bluefield on the evening of October 26. Dr. McClue talked on the various problems incident to public health work and the private practice of medicine. His address was widely discussed by the members present.

R. R. STUART, *Secretary*.

MONONGALIA COUNTY

The regular monthly meeting of the Monongalia County Medical Society was held at the Hotel Morgan, Morgantown, on Tuesday evening, October 3, with a good attendance. Dinner was served at 6 o'clock and the scientific program followed.

The essayist of the evening was Dr. R. U. Drinkard, Wheeling, who gave a highly interesting paper on "The Acute Abdomen." A full discussion followed.

G. R. MAXWELL, *Secretary*.

WOMAN'S AUXILIARY

CABELL COUNTY

The Woman's Auxiliary to the Cabell County Medical Society, met at the home of Mrs. H. A. Brandebury, Huntington, on Monday, October 9, at 2:30 o'clock in the afternoon. Mrs. Gilbert A. Ratcliffe, president of the local auxiliary, presided over the meeting with sixteen members present.

Mrs. W. E. Neal, Huntington, gave a very interesting talk on "The Origin and Work of the Mother's Club of Huntington." Following this address a business meeting was held, and a drive for membership was inaugurated. Mrs. F. E. Brammer, chairman of Hygeia, reported that the proceeds of the recent rummage sale amounted to $15. This money is to be used to place Hygeia in city schools.

After various business discussions, the meeting was adjourned to reconvene on November 14.

ELIZABETH G. ROBINSON, Secretary.

OHIO COUNTY

The Woman's Auxiliary to the Ohio County Medical Society closed its activities for 1932-1933 with a picnic at Oglebay Park, the latter part of June. It was well attended with approximately fifty doctors and their families present.

The first meeting of the autumn for the Auxiliary occurred Friday evening, September 29, in the reception rooms of the S. S. Bloch Nurses' Home, of the Ohio Valley General Hospital, Wheeling. Mrs. R. U. Drinkard, President, together with the officers, received the members at eight o'clock. A delightful musical program was presented, and refreshments were served at the close of the meeting.

MRS. ROBERT J. REED, JR., *Secretary*.

EXECUTIVE BOARD MEETING

The Executive Board of the Woman's Auxiliary to the West Virginia State Medical Association held its fall meeting at Hedge House, Parkersburg, on October 6, 1933. The flolowing members were present: Mrs. Frank V. Langfitt, Mrs. C. E. Copeland, Mrs. O. L. Aultz, Mrs. A. H. Stevens, Mrs. R. U. Drinkard, Mrs. V. E. Holcombe, Mrs. G. A. Ratcliff, Mrs. F. E. Brammer, Mrs. S. M. Prunty, Mrs. M. F. Petersen, Mrs. J. S. Klumpp and Mrs. W. B. Richardson.

Following a delightful luncheon the meeting was called to order by the president, Mrs. Frank V. Langfitt, who gave a brief resume of her trip to the national meeting in Milwaukee. The treasurer reported a substantial sum in the treasury with all bills paid. Much new business was discussed and recommendations entertained to be brought up at the annual convention in Huntington in May.

Material and suggestions for auxiliary programs will be available to all county secretaries if they write to Mrs. S. M. Prunty, Parkersburg, Chairman of the State Program Committee. Mrs. V. E. Holcombe urged the coöperation of all county secretaries in sending the report of their meetings for publication in the Journal. The meeting adjourned to reconvene at 9:30 o'clock on the morning of the first day of the state convention.

Following the meeting the Woman's Auxiliary to the Parkersburg Academy of Medicine was hostess at a charming informal tea to honor the board members.

AN INVITATION TO RICHMOND

The Southern Medical Association will hold its twenty-seventh annual meeting in Richmond, Virginia, on November 14-17, and the doctors' wives of Richmond have planned an entertaining program for the wives of all the visiting doctors.

Many interesting landmarks, historical as well as beautiful, will be visited. These will include a trip to Jamestown, with its air of brooding sadness, and to lovely, restored Williamsburg, with its governor's palace and House of Burgesses. Local committees have been busy with plans for weeks and a most cordial welcome awaits the visiting wives.

KANAWHA COUNTY

The Woman's Auxiliary to the Kanawha Medical Society held its regular monthly meeting at the home of Mrs. E. M. Shamblin, Charleston, on Tuesday evening, October 10. Mrs. O. L. Aultz, president, presided over the meeting at which nineteen Auxiliary members were present.

Mr. John Hart was the speaker of the evening and gave an interesting talk on "Hospitalization on Periodic Payment Plan." This was followed by the general business meeting, at which time a plan for increasing the Hygeia fund was discussed. Members were asked to provide cars for a tour of the Capitol during the State Nurses' Convention here.

The meeting adjourned to reconvene on November 14 at the home of Mrs. A. A. Wilson, 1001 Highland Road, Charleston.

MEDORA W. CHAMPE, *Secretary*.

MARION COUNTY

The Woman's Auxiliary to the Marion County Medical Society held its first fall meeting in the home of Dr. and Mrs. G. H. Brownfield, Fairmont, on September 25. Mrs. Amos H. Stevens, the president, presided.

Mrs. Frank V. Langfitt, Clarksburg, state president of the Auxiliary, was an honor guest and gave a report of the national auxiliary meeting of the American Medical Association in Milwaukee.

Mrs. J. R. Tuckwiller gave a report of the state auxiliary meeting held in Charleston in May. The state Public Relations Chairman, Mrs. Charles L. Parks, gave an outline of the work of her department. The meeting was concluded with a sketch dealing with the primitive period in the medical profession, read by Mrs. F. F. Sowers.

Mrs. John E. Offner, *Secretary*.

GENERAL NEWS

HOSPITAL MEETING

The Eighth Annual meeting of the Hospital Association of West Virginia was held at the Stonewall Jackson Hotel, Clarksburg, on October 3 with the largest registration the Association has ever had. Featuring the program was the evening address of Dr. Nathaniel W. Faxon of Rochester, New York, President of the American Hospital Association, on present day hospital problems. Dr. Faxon was present throughout the meeting and took and active part in the morning and afternoon discussions.

Dr. T. K. Oates, Martinburg, was elected President of the Association to serve for the coming year. Dr. James R. McClung, Richwood, was elected first vice-president and Dr. E. F. Heiskell, Morgantown, second vice-president. Mr. Charles W. Warner, Charleston, was elected secretary-treasurer. Mr. Warner succeeds Mr. Joe W. Savage, secretary of the Hospital Association for the past five years, who resigned to devote his entire time to the West Virginia State Medical Association.

The program included papers by Mr. John Hart, Charleston, on group hospital insurance; Dr. R. H. Walker, Charleston, on the effect of the gross income tax on West Virginia hospitals; Miss Ruth E. MacMasters, Huntington, on hospital problems of today and Dr. Robert Bess, Keyser, on hospital cooperation under the National Recovery Act. Dr. C. R. Ogden, Clarksburg, served as banquet toastmaster with Dr. Faxon as the guest speaker. The Address of Welcome was delivered by Dr. H. H. Esger, President of the Harrison County Medical Society, and the response was made by Dr. T. L. Harris of Parkersburg.

OUR 1934 MEETING DATE

May 14, 15 and 16, 1934, has been selected as the meeting date for the Sixty-seventh annual meeting of the West Virginia State Medical Association at Huntington. This date was fixed by the Program committee after being approved as satisfactory by the Cabell County Medical Society.

The meeting of the Program committee was held at the Pritchard Hotel, Huntington, on October 19 with all of the various special sections represented. The program was tentatively outlined for next year's meeting and a number of state and out-of-state speakers were selected as program material.

An innovation at the Huntington meeting next year will be the partial elimination of all afternoon programs and the substitution of clinical conferences. On the afternoon of May 15 and 16 only one speaker will be scheduled. Immediately following, the general sessions will adjourn and the informal clinics will be conducted.

LOCAL ANESTHESIA

The C. V. Mosby Company, St. Louis, has just released "The Technic of Local Anesthesia" by Dr. Arthur E. Hertzler, Professor of Surgery in the University of Kansas. This is the fifth edition, with 285 pages and 148 illustrations. The retail price of this volume is $5.00.

This book differs essentially from other works on local anesthesia in that it recommends the use of minimum amounts of solutions, not because of safety but because a more accurate technic is possible than when large amounts of liquids are injected haphazardly. Dr. Hertzler advocates infiltrative anesthesia rather than regional blocking because constriction of vessels is secured thereby which aids in exact anatomic operating.

A chapter on spinal anesthesia has been written by Dr. Arch E. Spelman, on the basis of an experience of some two thousand cases. Dr. Raymond F. Gard has added a short chapter on intravenous anesthesia.

FROM OTHER JOURNALS

THE NEW FOOD AND DRUGS BILL

Assistant Secretary of Agriculture, Hon. R. G. Tugwell, Washington, states that, "Reputable publishers and broadcasters do not want to disseminate fraudulent or misleading advertising. They realize in the long run their interests are identical to the interests of consumers.

"In the field of foods, drugs, and cosmetics, unfortunately, broadcasters and publishers do not have facilities for determining accurately whether or not a product is truthfully represented in advertising copy. True, some publishing firms have formed their own reveiwing committees, and others submit medical advertising to competent advisers for comment. But on the whole the public can hardly expect every newpaper and radio station in the United States to maintain costly laboratories for testing advertised products; new patent medicines, for example, come and go with astonishing rapidity and there are now literally thousands of them on the market. No matter how well intentioned publishers may be, therefore, there is placed before the public a great deal of advertising that deceives consumers, much to the detriment of public health.

"While national magazines, good metropolitan dailies and radio networks carry many fraudulent and misleading advertisements, by far the most flagrant abuses are found in movie magazines, mail-order catalogues, educational and religious journals, cheap fiction or 'pulp' magazines, small dailies, country weeklies, and on small independent stations, as well as in direct mail advertising. This is probably a matter of competition. Just why a 'pulp' magazine should declare that a depilatory is SAFE to use when it is known that the depilatory contains a positively dangerous ingredient that sends users to the hospitals, causes all hair to drop from the body, and sometimes leads to death, I do not know, unless it is that the better advertising accounts have exhausted their funds before they reach this class of publication and it must, perforce, take what it can get. Apparently educational and religious journals find themselves in the same predicament. Many small town newspapers salve their consciences for advertising perfectly worthless and often dangerous products by charging a higher advertising rate for this type of copy.

"Publishers as well as advertisers themselves, are making some effort to improve the situation. There was recently organized in New York City the Advertising Review Committee, consisting of representatives of national advertisers, advertising agencies, publishers and broadcasters, to review cases considered as violating sound advertising practices. This committee went on record as being in full sympathy, in principle, with remedial legislation now being considered by congress and backed by the President and the United States Department of Agriculture. The committee recommends the revision of the Food and Drugs Act which will prevent false and misleading advertising in food and drugs."—*Georgia Medical Journal.*

MEMBERSHIP FORTIFICATION

"About the only effective weapon against the trend to socialize medicine is a healthy, wholesome state organization with its component county and city societies", Dr. W. L. Allee, president-elect of the Missouri State Medical Association, warned the membership of that society in a recent discussion of some of the important questions confronting the medical profession.

Emphasizing the need for collective and individual activity on the part of the profession to achieve results and make the machinery of organization function effectively, Dr. Allee said:

"We have all had an increase in our charity cases and we have all made concessions in our usual fees which have seriously impaired our earnings. With the addition of delayed collections we naturally look about for ways of paring expense. Under these conditions it is human, wise and for most of us compulsory to economize.

"Unfortunately, many of us do not evaluate very thoughtfully the various items selected for paring. There will be some doctors that will try to balance their budget by paring their membership to the State Association and forget to economize in the number of fraternal and social orders, not to mention the quasi social organizations, that are supposed to be so necessary to properly animate Main Street. I mention this because I am one of those joiners and know the drain in the course of a year and also know that the annual dues to the State Association are but a few cents more than the price in a month of one of the almost weekly luncheon tickets we are called upon to purchase by some local committee.

"Why not select some small item once a month for elimination rather than our state membership

dues which are but sixty-seven cents a month.*** I realize the fact that most of our members appreciate and accept their responsibility to organized medicine but every profession has some members with blacksliding tendencies who are careless and indifferent and are willing to share the protection and influence of a great organization but refuse to contribute with time, effort or dues."

Dr. Allee's keen analysis sums up in a few words one of the important problems confronting the medical profession today—that of keeping its own ranks intact and of maintaining enthusiasm for a concerted and group attack on the grave questions which have arisen.

The serious problems he speaks of are not those peculiar to his own state. The medical profession in Ohio, too, is confronted with critical economic and social situations. t is just as important for the physicians in Ohio to maintain strong and active medical organizations as it is for their colleagues in Missouri. It is just as necessary and advisable that the physicians in Ohio properly evaluate the benefits which they have derived and will continue to enjoy from membership in organized medicine. It is just as important that the units of organized medicine in Ohio continue to receive the support, financial and otherwise, of all eligible physicians in every community—perhaps more important at this time than ever before. Our line of offense and defense has been well established. It is up to us to keep it firmly fortified.—*Ohio State Medical Journal.*

UNFAIR COMPETITION

The problem of conducting out-patient departments of hospitals in such a way that only the deserving will benefit and no injustices will be done to individuals practitioners of medicine has long been the source of considerable misunderstanding and friction between the medical profession and some hospital authorities.

Troublesome as it is in normal times, the problem is now more acute than ever and, in recent months, has led to almost open breaks between physicians and hospital officials in some communities, where there has been insufficient planning to meet emergency conditions resulting from unsettled economic conditions, or where hospitals have deliberately invaded the field of the private practitioner.

The medical profession would be the last to belittle the generosity of most hospitals or to refuse to recognize the economic crisis which many of

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them are facing. Physicians always have been only too willing to assist hospitals with which they are connected in caring for the charity load.

However, many members of the medical profession believe, and rightly so, that hospitals should avoid competing unfairly with individual medical practitioners. Such abuses are most prevalent among patients seeking care at clinics run in connection with hospitals where a considerable number of persons able to pay something for medical care to some private practioner are being treated in some instances gratis or for a fee below that customarily charged by the private practitioners of the community.

In some instances, this situation has arisen because of the lack of proper investigating mediums by the hospital. In others, it is the result of a tendency on the part of short-sighted hospital officials to use the members of their medical staffs to improve the economic condition of their institution.

Whatever the cause, unfair competition has resulted in some instances and is a situation which should be corrected. Physicians are just as hard-pressed financially, perhaps more so, than any other group. They have a right to protest unjust competition, especially by institutions to which they have contributed much gratuitous service.

A lot of sound advice to hospitals generally on this question is contained in the following editorial, entitled "The Hospital as a Competitor of the Family Physician", published in a recent issue of *The Modern Hospital*, to which the medical profession, we believe, will add a solemn amen:

"Dispensary abuse has been the shibboleth of doctors and laymen alike for almost as long as out-patient departments have been in existence", the editor of *The Modern Hospital* declares.

"Moreover, the reputed dimensions of the problems have consistently been in direct ratio to the vividness of the imagination of the narrator. To some, every patient who is able to pay a fee of any size should be referred to a local practicing physician. It is believed by others that only those able to pay the customary office fee of near-by doctors should be refused by the hospital clinic.

"There are those who without question will and do abuse any gratuitous service. Many no doubt secure treatment from the institutional out-patient department who could and should afford private care. But the technique for routinely ferreting out the imposter, for separating the undeserving from the worthy, has not as yet been developed. Moreover, the hospital during the past few months has often permitted an abuse to develop which places

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THE SANATORIUM is a private institution with 150 beds, located in the Ginter Park suburb on the Richmond-Washington National Automobile highway. Midway between the North and the distant South, the climate of this portion of Virginia is almost ideal. Nearby are many reminders of the Civil War, and many places of historic interest are within easy walking distance.

THE PLANT consists of fourteen separate buildings, most of which are new, located in the midst of a beautifully shaded lawn, surrounded by a 125-acre tract of land. Remoteness from any neighbor assures absolute quietness.

THE LARGE number of detached buildings makes easy, satisfactory and congenial groupings of patients. Separate buildings are provided for men and women. Rooms may be had single or *en suite* with or without private bath. A few cottages are designed for individual patients.

THE BUILDINGS are lighted by electricity, heated by hot water, and are well equipped with baths.

THE SCOPE of the work of the sanatorium is limited to the diagnosis and treatment of nervous and mental disorders, alcoholic and drug habituation. Every helpful facility is provided for these purposes, and the institution is well equipped to care for such patients. It affords an ideal place for rest and upbuilding under medical supervision. Six physicians reside at the sanatorium and devote their entire attention to the patients. A chartered training school for nurses is an important part of the institution in providing especially equipped nurses—both men and women—for the care of the patients.

SYSTEMATIZED out-of-door employment constitutes an important feature of the treatment. Wonderful work in the arts and crafts is carried on under a trained teacher. There are bowling, tennis, croquet, billiards and pool.

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it in direct competition with the family doctor. Not only in the dispensary but in the accident ward as well are patients treated for all types of not trivial and potentially serious ailments when the only explanation of the presence of such persons there is an effort on their part to secure gratis a service for which they should pay. No institution can expect the full cooperation of its local physicans which thus unfairly competes with them. To refer such patients promptly to their family doctor is not only an act of justice to the physician, but also one fraught with sound business sense."—*Ohio State Medical Journal.*

FREE MEDICINE IN DETROIT

Doctor, consider this. Banker, stop and ponder. Merchants, what if you dealt in medicine?

If you can get your body made well and physically pliable for nothing, why can't you get shelter for that body, food to nourish it, and clothes to cover it for the same paltry price?

In other words, *free medical service,* handed out indiscriminately and by *social workers* whose generosity emanates from *taxes* or *levies* upon other persons' pockets instead of their own, is the first and longest stride towards the *devastation by dole.*

After free food, one of the first free items of life for which the communist howls is a free doctor.

Every doctor in the land should witness what "free medicine" has done in Detroit, where as in other parts of the state of Michigan there has been much medical economic experiment.

Reliable figures secured in Detroit show that: Nearly three years ago a summary of the facts demonstrated that 50 per cent of the medical cases in the community were being cared for at the expense of the taxpayer. The clinics supported from charitable donations gave clinic and dispensary outpatient service to 77,183 sufferers, real and imaginary; and these treatments included 330,507 calls. On top of this, the Detroit Department of Health, directly tax-supported, treated 77,794 patients, including 251,838 calls; and at Receiving Hospital, also directly tax-supported, there were 18,461 patients and 82,184 calls. These mounted to a literally grand total of 171,136 patients and 670,088 calls! *About half of the medical cases treated in metropolitan Detroit 1928 were looked after by clinics maintained by charitable funds, supported by tax-payers, and by tax-supported clinics.* The condition has grown with the dole. It will grow still

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further, until it becomes obviously intolerable. And then, change will be too late.

Dr. J. Milton Robb, President-elect of the Michigan State Medical Society, declares that unless this medical dole is stopped, the dole for every detail in life is more imminent than is dreamed of by the average citien, and hundreds of doctors with vision concur most heartily in this opinion.

There is no doubt but that free medical and hospital care is a great developer of an attitude of pauperization. Sympathy for the humanities has made of charity the camel within the tent.

Often patients who are on the town go into hospitals for any minor illness and finally manage to have everything from major operations down performed on them at somebody's else expense before leaving the hospital.

Dr. Robb writes feelingly. He says in part:

"Medical service is a commodity, worth money. The doctor is exempt from none of the expenses of living and bears some that are inherent in his profession. Rent, equipment and medicines all cost him money, to say nothing of the fact that he is obliged by the nature of his calling to live according to certain standards that are also expensive.

"We have the spectacle of institutions erected with the proviso that the donor will put up the building if someone else—the taxpayer—will equip and operate it. If some of these institutions were more nearly actual 'monuments,' so built that no one could by any possibility get into them, the world would be just that much better off. Philanthropists would do well to consult medical experts on design and equipment, whether the donor or someone else is to pay for them or part of them.

"Plenty of our Detroit patients balk at the idea of being made 'paupers' in connection with their medical treatment and surroundings. The only respect in which they are willing to be paupers is that they decline to pay for what they get. The surroundings are oftener than not so far ahead of the homes from which some of the impostors come that it is little wonder that they prefer the hospital to the home. The percentage of bath-tubs, though almost always unused, is considerably higher in the hospital. Honestly, patients on charity want better conditions than I would dare to ask for members of my own family. A Rolls-Royce type of treatment is insisted upon by men who could only afford a bicycle if they had to pay for it themselves.

"Maternity cases, one would think, might come under a different category. Not at all. They

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form one of the most aggravated forms of abuse of philanthropy. One woman on record holds the trophy with 23 births and the end is not yet. Her outspoken philosophy is: 'Someone's got to take care of it; I can't.' Maternity treatments are free to the irresponsible or the vicious mother—but how about the taxpayer? Less easy money, in the form of free care, might help reduce the birth rate of undesirables. This is not a hard-boiled statement, it is nothing but the application of common sense to a condition that has adready reached the point of intoleration."

"As at present constituted, the existence of free medical treatment strikes at the very foundations of the nation. It is not alone that the money of the taxpaying citizen is being wantonly wasted. That is bad enough, in all conscience. But deeper and more perilous is the fact that it heads the people of the United States to a general condition of pauperism in their attitude to life. The free medical dole is only the beginning. It leads inevitably to the general and all-embracing dole, in which the self-respect withers and the sense of shame disappears.

"From a familiar experience with conditions as they exist, it can only be said that the present system of free medical treatment and attendance constitutes a menace, the seriousness of which it would be difficult, if not impossible, to over-estimate."

What applies to Detroit applies to every community in the land. The parasites, thanks to misguided philanthropy, spent more of the taxpayers' monies than the taxpayers spent on themselves. Unless this tendency is stopped the certain revolt will be chaotic and uncheckable.

Doctor, don't lend your help to "Free Medicine" as communism's flagbearer.—*Illinois Medical Journal.*

EVERY ONE IS PRESCRIBING

A. E. H., in the Journal Lancet, July 15, makes the following timely comment:

Physicians themselves are to blame in a certain measure for the innumerable presons practicing medicine.

Technicians of various kinds, nurses, druggists, barbers, beauticians, athletic directors and shoe

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clerks are practicing medicine. At social functions, every day, advice is given and prescriptions are passed around by lay persons, even in the presence of members of the profession—everyone is practicing medicine. And how they delight in telling about it!

Large and successful industrial corporations, banks, institutions of learning and public utility companies have organized "health services" and "welfare departments" wherein employees and students receive actual medical care at any time they apply whether a physician is present or not. In some cases its humble beginning is a "rest room" presided over by a pay-toilet-qualification attendant who carries aromatic spirits of ammonia, aspirin, sal hepatica, unguentine, iodine and bandages as an interesting and ever increasing sideline. Then along comes a case of asphyxiation and contact is made with the resuscitation squad of the fire department and so on and on without interference.

Physicians are to blame for their attitude of tolerance. Proper allowance should be made for emergencies, but surely much of this is neither necessary nor right and the question properly arises if and to what extent the profession should tolerate this condition. Moving picture operators are not imposed upon in like manner. A profession committed to free services for those who cannot pay should first of all be able to distinguish between charity and imposition.

WRONG QUOTATION

Due to a misunderstanding in the October Journal, the price of National Refined Toxoid (alum precipitate) single-dose immunization, 10 cc. (10 immunizations) was quoted at $2.75. This quotation appeared in the page advertisement of the National Drug Company, Philadelphia, on page 10. The special price to physicians is $3.00 instead of $2.75 as quoted.

MAKING A WILL

Believeing that the subject would prove of great appeal to members, General Counsel Hartley F. Peart, Esq., of the California Medical Association was requested to write an article touching upon and illustrating the complexity of the problems pertaining to the making of wills, and on some of the more important statutes of California concerning community property rights and other interests in a decedent's estate. As General Counsel Peart points out, physicians, because of their confidential

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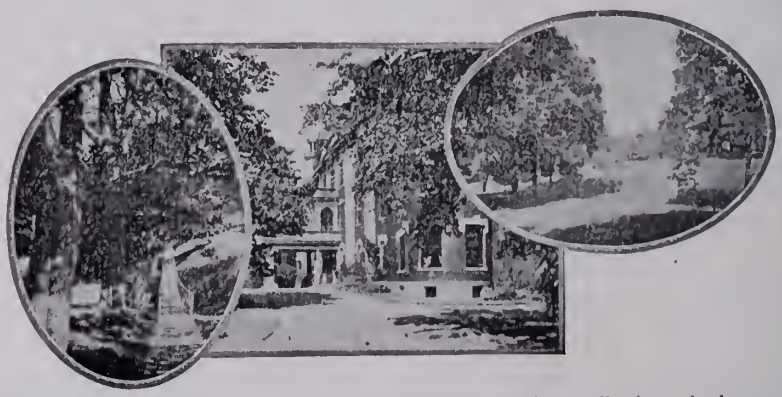

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REST COTTAGE: This psychoneurotic unit is a complete and separate hospital building, elaborate in furnishings and fixtures.

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relations with patients, are frequently consulted by the latter with reference to the making of their wills; and it is often necessary for a physician to suggest that a patient get his earthly affairs in order. For these reasons, as well as for the personal information of members of the Association, it is hoped that the advice given by Mr. Peart will be found of value.

General Counsel Peart was for many years the inheritance tax attorney for the treasurer of the city and county of San Francisco, and thereafter special counsel for the state controller in a number of leading cases involving inheritance tax due to the state of California; including the estate of the late cattle baron, Henry Miller, in which an inheritance tax of over two million dollars was paid, after years of legal proceedings spent in determining and fixing the tax. The administration of the Inheritance Tax Act of California is directed to the fixing and assessing of such tax on the interests and property which pass from a decedent by reason of his death.—*California and Western Medicine.*

VINEGAR OF THE FOUR THIEVES

One of the eighteenth century glass stoppered shelf bottles in the ancient pharmacy of E. R. Squibbs & Sons, exhibited this summer at the Century of Progress Exposition in Chicago, is labeled *Acetum Bezoardicum.* This name is unintelligible and untranslatable to the average member of either the medical or the pharmaceutical profession.

If one who is curious takes the trouble to look up the meaning of the word "bezoar" he will find that it applies to a concretion of calculus found in the intestinal tract of certain kinds of animals, particularly the herbiverous, and that it was once highly esteemed for its antidotal virtues.

If one consults a medical or pharaceutical authority of the eighteenth century or earlier on the subject of bezoar, it will be found that the faith in the efficacy of this drug was so strong that it was believed that "no poison, no eruptive, pestilential or putrid disease, could resist its influence."

Satisfied with this definition the average investigator would dismiss the subject at this point with the assumption that *Acetum Bezoardicum* was a preparation of bezoard in vinegar (*acetum*). But there is a much more interesting tale connected with this name and with this preparation.

It is in reality made from aromatic spices and garlic, extracter with vinegar, and no "bezoar" entered into its composition at all, but the adjective

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"bezoardic" was intended to have a generic meaning of *antidotal,* as applied to this particular preparation, but to no other, for there were a number of preparations into which bezoar actually entered as an ingredient in the days when it was held in high repute.

If the searcher looks still further he will find that it was called *"Gewurz Essig"* (spice vinegar); "Pest Essig" (plague vinegar); *"Acetum Prophylactium"* (prophylactic vinegar), and *"Vinaigre des Quatre Voleurs"* (vinegar of the four thieves), and that it had a most unusual history.

The story told of its origin is that during an epidemic of "the plague" in Marseilles in the early part of the eighteenth century, four robbers, by the use of this prophylactic, attended without harm hundreds of dead and dying citizens, and under the guise of these disinterested services they robbed their victims; and that one of them upon being caught confessed their crimes and saved himself from punishment by divulging the composition of the preventive they had employed to pursue their nefarious practices.

The belief in this fanciful tale was so strong that the preparation soon attained a wide sale in both Europe and America and this sale continued for more than a century.

The interesting part of the story is that a modified form of this same remedy is still official in the National Formulary of the United States and in a number of foreign pharmacopoeias as well under the name of Aromatic Vinegar.

SURGERY OF STOMACH AND DUODENUM

Dr. J. Shelton Horsley, attending surgeon of St. Elizabeth's hospital, Richmond, is the author of a new volume "Surgery of the Stomach and Duodenum," published by the C. V. Mosby Company of St. Louis. The volume, which retails at $7.50, contains 259 pages with 136 illustrations.

Recent physiologic work on the gastro-intestinal tract not only is interesting but has many applications in surgery of the stomach and duodenum. This monograph represents largely the personal experience of Dr. Horsley and attempts have been made not only to describe the common and the unusual clinical symptoms that arise from gastric and duodenal diseases and the lesions causing the symptoms, but to correlate both the symptoms and the

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The great increase in the death rate from cancer of the stomach is another justification for a volume on surgery of the stomach. This is particularly true, says Dr. Horsley, because while radiation has a prominent place in the treatment of some types of malignancy, it is generally recognized that there is only one cure for cancer of the stomach, surgical excision.

SIGHT-SAVING CLASSES

"The growth in the number of sight-saving classes has been steady throughout the United States since their establishment in 1913, and there are now about 400 such classes. It is estimated that 47,000 pupils in the entire school population are suffering from defective vision. This means that approximately 5,000 more sight-saving classes are needed to provide educational advantages for these children with impaired vision," comments Marguerite Kastrup in the September number of *Hygeia*, the Health Magazine.

With the aid of glasses, clear type books and blackboard work, these children, under the guidance of special teachers, improve quite rapidly both physically and emotionally.

The children group themselves in the following categories: those having insufficient vision to enable them to read ordinary print or to see work on the blackboard; those who may be able to read ordinary type but at the expense of their vision; those with progressive eye troubles, and lastly those children with eye diseases which seriously affect vision. The author describes in detail the progress made by typical children of the sight-saving class.

FEDERAL VACANCY

The United States Civil Service Commission announces open competitive examinations for the position of Junior Medical Officer (interne). Applications for the position must be on file with the U. S. Civil Service Commission at Washington, D. C., not later than November 15, 1933.

Vacancies in this position at St. Elizabeths Hospital, Washington, D. C., and in positions requiring similar qualifications, will be filled as a result of this examination.

The entrance salary is $2,000 a year, less a deduction of not to exceed 15 per cent as a measure of economy and a retirement deduction of 3½ per cent. A further deduction of $60 a year will be made for quarters.

Competitors will not be required to report for a written examination, but will be rated on their education and experience.

Full information may be obtained from the Secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city, or from the United States Civil Service Commission, Washington, D. C.

MENTAL GROWTH

"That there is a direct relationship between a child's physical ability and his scholastic standing seems to be quite well established. Improved physical development leads to improved work in school," comments Carlton Palmer in "Removing Rural School Handicaps to Mental Accomplishment," an article appearing in the September number of *Hygeia*, the Health Magazine.

Because malnutrition is more common among rural children than among city children, it may be a formidable handicap to mental accomplishment. Play activities, skilfully directed, can do more to give rural school children the stimulating conditions for learning that are now occasioned by city environments than can any other single measure. Physical defects which drain youthful vitality cause fatigue and hamper pupil advancement in general are also hazards of mental development.

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THE SURGEON OF THE FUTURE*

(ORATION ON SURGERY)

By W. S. FULTON, M. D., F. A. C. S.

Wheeling, W. Va.

IN remote and recent past, the future of the art and the science of surgical practice has occasioned much discussion. Failing to stimulate thought and action, prophecy becomes little more than idle speculation and thereby loses most of its potential value. Yet, any sincere attempt to evaluate future tendencies in the light of the errors of the present and the past is healthy practice and may assist in laying the foundations of the surgical progress of the next generation. The superstructure of our surgical temple of the future will be varied and adapted to the then-existing conditions and exigencies over which we, at present, have little or no control. The purpose of this essay is not to portray the fabric of the future structure but rather to discuss with you certain problems of the present day as they may influence the practice of our colleagues of the future.

If we pause to consider the surgical progress of the past, we may recognize certain epochs of development, "fashions of surgery", as Cushing refers to them. Prior to the eighteenth century surgeons were content to attempt restoration of anatomical structures, guided in their efforts by the application of the simplest of physiological principles; to close the wound; to stem the loss of blood; to amputate the dead or dying member or to relieve pain by cutting for the stone.

Under the leadership of John Hunter, surgery ceased to be regarded as a mere technical mode of treatment and began to fill its place as a branch of scientific medicine, firmly grounded in physiology and pathology. This period may well be termed the renaissance of surgery. There followed a great evolution in this branch of medicine, for the surgeon began to think and act in terms of disease of an organ. Scores of new operative procedures were devised and great impetus was given to the onward march by the introduction of ether anesthesia in 1846. No longer was the heroic, almost calloused surgeon pitted against seconds of time in the operative treatment of his pain-racked patient. Careful, deliberate dissection of the tissues and organs now became possible and therefore the surgeon could attempt operations which were impossible during the pre-anesthetic days. In spite of all these devel-

*The oration on Surgery delivered before the W. Va. State Medical Association at Charleston on May 22, 1933.

opments, major surgical operations were performed only as dire necessity demanded because of the "bugaboo" of infection. The progress of this epoch did not begin to bear full fruit until the development of antiseptic surgery and its successor, surgical asepsis.

With Lister, surgery of election was born. In pre-antiseptic days, even the bravest dared not attempt operative treatment for disease which did not, in itself, endanger the life of the patient. Here may I pause to remark that, although the development of antiseptic and aseptic principles has been one of the greatest boons to mankind, nevertheless, it cleared the way for one of the greatest abuses of medical practice, namely the unnecessary surgical operation. In pre-Listerian days, even the most ruthless hesitated to subject his patient unnecessarily to the hazard of surgical death.

Since the turn of the last century under the leadership of Billroth, Murphy, Halstead and Cushing, to name but a few, surgeons have become concerned in the restoration of the functions of organs. Concentration of effort and thought upon this subject has resulted in hitherto unprecedented advance in the science of surgery, and this continues into our present day.

A study of these previous epochs of development reveals that progress in the science of surgery has followed the lines of greatest promise and of least resistance, as pointed out and inspired by the leadership of great teachers. This progress has not been accomplished solely by the efforts of the surgeon but has been made possible by contributions from all the fundamental branches of science. With this brief review of the past, we might rightly ask—what does the future hold? What will be the next epoch of surgical development?

Before yielding to the urge to speculate upon the possibilities of the future, it may be well to consider some of the outstanding shortcomings of the surgical practice of the present. It is only by the free admission of the errors of omission and commission, as revealed by a scathing search for the truth, that the individual or the profession as a whole may be prepared to progress. We can but admire the profound wisdom of Maimonides' words, "Grant me strength, time and opportunity to correct what I have acquired, always to extend its domain; for knowledge is immense and the spirit of man can extend *infinitely* to enrich itself daily with new requirements. Today he can discover his errors of yesterday and tomorrow he may obtain new light on what he thinks himself sure of today."

One of the foremost *indictments* against the surgical profession is the enormous number of *unnecessary* major operations it performs. This criticism is not for the surgeon who, after thorough study of his patient, conscientiously feels that operation will most effectively aid return of health, even though the error of the diagnosis becomes apparent through the surgical wound, but for the *unscrupulous* who, either through excessive surgical fury (which he usually thinks is surgical judgment) or through incomplete study, so contorts his reason or stupefies his conscience that he will urge and perform surgical treatment, little realizing that, were he or his own the patient, his recommendations would be other than surgical. Unnecessary surgical operations help to fill the coffers of the cults and this, regardless of whether they are done because of faulty diagnosis, poor judgment or calloused conscience. Little can the patient be blamed who, after various "ectomies and otomies", several operations for the relief of adhesions added, still complaining of nervousness, indigestion and abdominal pain, finally in desperation seeks the mystical consolation of faith-healing or the conditioned mauling of the chiropractor. Temporarily, at least, he—more frequently she—is shielded from the specter of surgical steel.

A wealth of surgical principles and technical knowledge, accumulated often through bitter experiences of the unwillful sacrifice of human life—this is the heritage of the surgeon from the past. With all of this endowment from the past, with all of our elaborate

institutions devoted to medical education and experience, with all of our present day hospital facilities, it is not comforting to consider that our surgical mortality rates of today are but very slightly lower than those of two decades ago. True, there has been some improvement in certain types of operations, but realize that the mortality rates in appendicitis have not been reduced during the last twenty years. Why should this be as it is? What are some of our deficiencies which operate to prevent a satisfactory reduction of mortality rates?

Of first order of importance is faulty surgical diagnosis. The burden of this deficiency is borne not only by the surgeon but is shared by the practitioner who refers his patient for surgery, if this be the case. The failure to recognize the atypical acute appendix until perforation has occurred, to mistake the abdominal manifestations of an early basal pneumonia for an acute surgical abdomen, or failure to realize that an acute coronary occlusion can simulate the clinical picture of a perforated duodenal ulcer, these are but a few contributing factors to high surgical death rates; and they are the result of inadequate preoperative study.

Errors of surgical judgment, at times an almost complete absence of it, not infrequently result in untimely surgical death. To recognize the poor surgical risk and hence to refuse an operation of surgical election, to know when the patient is ready for operation, to avoid doing too much or too little, once the incision is made, these are surgical attributes which are gained only by experience which has been tempered by unbiased self-criticism. I quote from Cushing—"Surgical judgment, indeed, is a more or less inspirational quality which is variable and elusive, all surgeons being conscious of having it in hand on some occasions, of losing it on others. It is a good deal like a game which even the best and most consistent player foozles for some unaccountable reason at certain times." To institute proper preoperative and postoperative treatment is but a corollary of sound surgical judgment, without which mortality rates can but increase.

The most unfavorable criticism of our entire system of medical education and licensure is that the graduate of a medical school is at once, or at the most in a year, granted the privileges and rights not only of a doctor of medicine but also those which permit him legally to perform major surgical procedures. *Here lies the most deplorable* contributing factor to high surgical mortality, namely the practice of surgery by those uninitiated in the art or the science of surgery. In spite of the materialistic tendencies of the present day, *human life remains sacred* and to sacrifice it to gain experience and ability should not be tolerated.

It would seem that the future progress of surgery as an art of healing depends upon the correction of these several faults of the present day. The research laboratories of the future will continue to add valuable contributions to the science of surgery. Undoubtedly the leaders of the profession will elaborate operative technique far superior to that of the present day. *However*, until the *rank* and *file* of the profession eliminates unnecessary surgical operations and succeeds in lowering mortality rates, the *progress* of the practice of surgery will be greatly *hampered*. What is the logical method of approach toward the correction of these deficiencies of the present?

It is apparent to all who consider seriously these problems of the future, that there is a need *for reform* in *medical education* and in the *licensure* of the surgeon. The essential question that must be answered is "*Who shall be permitted to do surgery?*" This thought is not a new one for we find that the Emperor Frederick II, in 1224, issued an edict which "required that a candidate for license to practice must be properly examined in public and to be eligible for examination, he must have studied medicine and surgery for five years and have practiced for one year under an experienced physician. The candidate for surgery was required to give evidence that he had studied the art for at least a year, in particular human anatomy, 'without which no

incision can be safely made, nor any fracture treated'." Yet today we find many who are attempting to establish themselves as surgeons, or at least do as much major surgery as they can grasp, with relatively *less* training than was required by Frederick II in the dark ages, seven hundred years ago.

A recent hospital survey indicates that 53% of internes in American hospitals are permitted to perform major surgical operations. Of course such operations are usually done under the supervision of trained surgeons and undoubtedly this is an important part of medical education. However, an undesirable side effect of this practice is that, in some instances, the interne is inspired with the idea that he can do surgery, and a year or two later, without further surgical training other than that acquired during his interne year, we find him attempting even the most difficult surgical procedures. It would be much healthier practice for the interne to consider the operating room primarily as a place to correlate the clinical and pathological pictures of disease rather than a place to learn surgical technique. He should not expect to become a surgeon from the training secured during a one or two year general hospital service. If he desires to do surgery, he should continue with special training for at least two or three years more. I quote from Foss—"Surgery must not be taken up lightly by the student but only after due deliberation and careful planning, and then only after a firm resolve to which he devoutly and persistently adheres, that he will never consent to perform a major operation upon a fellow human, unless in the greatest emergency or under the closest supervision until he has, as a result of long and thorough, self-sacrificing study, become fully competent to assume that greatest of all personal responsibilities."

If the problems of the present day are to be met, it would seem apparent that the privilege to do surgery *must* be divorced from the rights conferred by the degree of Doctor of Medicine. This privilege must be granted *only* after the candidate, having met certain minimum requirements of special training, can give evidence that he has become proficient in the specialty of surgery. Ability *only* should be evaluated, for it is realized that a long period of special training is not synonymous with surgical skill. The licensure of the surgeon of the future should become an integral part of the system of medical education. Such a plan is exemplified by an amendment to the Medical Profession Act of the Province of Alberta, adopted in 1926, which reads as follows:

"No person shall hold himself out to the public as a specialist or as being specially qualified in any branch of any class or system of practice in this section mentioned, without having received from the registrar of the University of Alberta a certificate of having complied with such conditions precedent as to qualifications or fitness as may be prescribed by the Senate of the said University."

The license to practice surgery should not be granted by the action of a board of the state or by sanction of a committee of any surgical society but by the approval of the university which has granted the candidate his medical degree. In this fashion, private or political influence on the part of the candidate or his friends will be largely obviated.

If the privilege to perform major operative procedures in the future is limited to those who, by virtue of special training, have become proficient in surgical diagnosis and technique, it would seem but a logical *conclusion* that surgical mortality would be diminished by this reform alone. Certainly the legion of technical blunders and the subsequent fatalities resulting from the surgical efforts of the uninitiated would be avoided.

Even though it would seem feasible to define the prerequisite training of the surgeon of the future, surgical judgment *cannot* be regulated by law. This is a personal attribute which can be attained only by experience. Some will acquire it more quickly than others; some will *never* possess it, in spite of many years of training. Likewise, legislation will not eliminate the unnecessary surgical operation, for undoubtedly until the end of time there will be those who, having

become masters in the technique of surgery, will nevertheless remain unscrupulous in their practice. However, it is a reasonable hope that operations which are performed unnecessarily, because of faulty diagnosis, will become less frequent, once the practice of surgery is carried on by those who have had adequate training. Let the surgeon of the future be more conservative and may he never fail to apply the Golden Rule when he is called upon to decide the mode of treatment in a difficult case. Conservatism is a valuable surgical characteristic but it must not be confused with procrastination or the shirking of responsibilities; these have no place in a surgeon's mental equipment. I quote the master surgeon Faure—"But we know also that it is a serious thing to do nothing and that a too comfortable conservatism is very often more dangerous than the thing which the weak and powerless call boldness."

The surgeon's chief concern in regard to operative mortality should be an effort to reduce the incidence of death attributable to operations of surgical election. Death following an operation of emergency or necessity can be condoned, providing the surgeon has given his best in technique and judgment and has instituted proper pre- and postoperative measures. However, each patient who dies through an operation of surgical election, dies not because of his disease but because of his operation. In an effort to reduce the number of these all too frequent tragedies, the surgeon of the future would do well to share the responsibilities of preoperative study and diagnosis with his colleague, the internist. A complete, thorough physical examination should be an obligatory part of the preoperative preparation. If, during the course of such an examination, conditions are revealed which indicate unusual risk or forecast an unfavorable outcome, surgery of election must not be undertaken.

A study of present tendencies may vision certain possible future developments in the science of surgery. Cushing prophesies that during the next twenty years there will be further concentration upon the problems of nutritional and endocrinological disturbances. Undoubtedly the surgeon of the future will be more concerned in problems of biophysics and biochemistry than we are at present. Great forward strides may be anticipated as the surgery of the sympathetic nervous system grows out of its swaddling clothes of the present.

Though future tendencies in the *science* of surgery are difficult to discern, it is certain that the art of surgical practice will be *perpetuated* and *nourished by* the same attributes that have fostered the surgical practice of the past and the present, namely integrity of purpose and a whole-hearted consecration of body, mind and soul to the relief of human suffering. So, to the surgeon of the future —may his trials be such as will steel his hand and, displacing all vanity and conceit, give him a soul. May his triumphs add ever increasing dignity and honor to his profession.

CHRONIC FEARS

It is not necessary to go through life tortured by anxiety and worry and their usual bodily accompaniments of indigestion, fatigue, headache and the many other unhealthy symptoms which haunt the footsteps of the chronic worrier.

Chronic fears are of two kinds: (1) fears of objective dangers, based on reason and caution, and (2) subjective fears, unreasonable and often obsessive, which possess the mind against the will and better judgment. The subjective type is most usual.

What is the basis of these fears and how they may be overcome is told in "Anxieties and Worries," an article by Dr. Smiley Blanton in the November issue of *Hygeia*, the Health Magazine.

Experiments show that babies inherit only the fears of falling and of loud noises and usually of being left alone with strange persons. All other fears are trained into children and adults through their environment. Adequate time should be taken in training young children so that the net result is not a state of anxiety and fear.

Treatment in the case of children has been indicated. Time must be given the child to socialize himself. In the case of adults who have mild fears, a philosophy that enables them to face the danger and uncertainty of life would be of help. In the more serious cases, treatment by physicians trained in psychologic medicine is necessary.

NOTES ON SURGERY FOR CANCER OF THE STOMACH*

By FRED W. RANKIN, M. D.
Lexington, Kentucky

It is difficult to over-estimate the seriousness of the problems which confront both the patient and the surgeon upon the establishment of the diagnosis of gastric cancer. It is the most formidable gastric lesion for which surgery is instituted—certainly it still leads the mortality statistics of malignancies in the various countries of the world and accounts for more than a third of the deaths from cancer. The ratio of males to females in any large group of patients studied statistically will be approximately three to one and the ages vary greatly being in the majority of instances in the decades between forty and sixty.

Youth is no longer considered a barrier against malignancy of the gastro-intestinal tract or any other part of the human anatomy, and it is a well recognized fact that cancer of the alimentary canal occurring in individuals under thirty years of age is a much graver situation than in older persons. There is a very definite group of youthful individuals, small though it be, in whom cancer of the alimentary tract is diagnosed each year. Usually this malignancy be it in the stomach, large bowel or rectum is of high intensity and frequently has reached an advanced stage before it is recognized. However, even when seen in an early stage of development its prognosis is unfavorable in the majority of instances even where a successful and radical resection is accomplished. The youthful tissues so vital in combating infections are helpless against the spread of malignancy—a marked contrast to the sluggishness of senescence.

A competent röentgenologist is almost uncanny in the high percentage of his accuracy of diagnosis of gastric and duodenal lesions; (of late years we have developed the same efficiency in organic lesions of the colon). However, it is essential that there be some symptoms of which the patient complains which demand a gastric survey before he reaches laboratory investigation. Unfortunately there are no early symptoms pathognomonic of gastrointestinal malignancy and frequently it has advanced to the point of a palpable mass and obstructive phenomena before a diagnosis is arrived at or exploration undertaken. The obvious corollary is that investigation of slight symptoms which persist over a short period of time should invariably be made and these slight symptoms in the main are persisting indigestion or pain. Gatewood, in an exhaustive article on Cancer of the Stomach, read before the American Surgical Association in 1932 found that pain was the predominating symptom complained of in more than one-half of the cases. His second observation was loss of weight, varying in his group from five to fifteen pounds. The fact that only four of his patients showed a slight gain in weight is easily corroborated by other observations. A parallel to this I have found in colon and rectal carcinoma in my own series.

The indigestion which these patients complain of is difficult to describe except to say that the history will vary from short periods of dyspepsia characterized by discomfort and pain, occasional nausea and vomiting to one of a long type which suggests duodenal ulcer. Nausea and vomiting are the results of pyloric obstruction from mechanical stenosis or interference with the motor mechanism of the stomach and usually occur late in the disease.

The gastric analysis shows no free hydrochloric acid in three out of four cases, but occasionally there is a mild hypoacidity and less occasionally hyperacidity.

Occult blood in the stool occurs in the vast majority of cases. Gatewood states 95% in

*Read before W. Va. State Medical Association, Charleston, May 23, 1933.

his series were positive to this test. The physical examination of these individuals is instructive obviously in ratio to the length of time the disease has existed. A palpable mass which is present in one-third to one-half of the cases is usually an unfavorable sign—likewise it is an index of a long standing lesion or one of high malignancy and fulminating growth.

Anemia is a frequent symptom associated with gastric malignancy. I do not know how often a profound anemia accompanies cancer of the stomach but it is an old custom among text-book writers to call to mind the very desirable necessity of differentiating anemia accompanying gastric cancer and pernicious anemia. I have frequently called attention to the fact that it is much more important to differentiate between pernicious anemia and cancer of the right colon than pernicious anemia and gastric cancer, and I think more frequently one will find the bowel lesion produces a more profound secondary anemia than will a gastric growth where there is any confusion of the diagnosis. However, whether one be secondary anemia, or primary anemia is readily determined by the blood studies which easily makes the differentiation. A clinching of the diagnosis rests in the hands of the radiologist who under fluroscopic examinations assisted by palpatory manipulation arrives at the correct answer in a most gratifying high percentage of cases.

The Relationship of Gastric Ulcer to Cancer:—One of the most interesting problems associated with gastric lesions is the relationship between chronic gastric ulcer and gastric malignancy. No little controversy has been indulged in by members of the medical profession since Cruvielhier in 1839 suggested such a relationship. Rekitansky three years later observed that ulcer sometime appeared with cancer and supported the statement that the cancer sometime had its origin in the ulcer. From time to time interesting statistical studies and surveys of this relationship have crept into the literature, but the most exhaustive study of the literature is an article by Cabot and Adie which appeared in the Annals of Surgery in July, 1925. To one interested in this phase of the problem I heartily commend it. The theory that cancer develops on a pre-existing ulcer has many adherents—the exact percentage of their figures, however, vary markedly. Another theory which has not been very highly regarded in France whence it came is that of Tripier who suggests that the ulcer-cancer was not a simple gastric ulcer with carcinomatous degeneration but a slow growing ulcerating malignancy from the beginning. Pathologists and others have failed to agree either with the criteria of his conclusions that gastric cancer develops upon a pre-existing gastric ulcer or the ratio in which it develops. MacCarty of the Mayo Clinic in 1909 stated that 71% of gastric cancers developed on ulcers. From these figures the percentage declined to zero. Cabot and Adie's conclusions were: "Carcinomatous transformation of a peptic ulcer does not exceed 5%. The proportion would be smaller if only the cases were included where the evidence is demonstrated, viz., a long history of ulcer — the limitation of the tumor to isolated foci or one portion only of the ulcer—freedom of the base from infiltration". It seems to me that an important conclusion to be drawn from this controversy is the fact that there does exist a relationship between ulcer and cancer. Whether one admits the relationship to be small or a large one, it is important to any individual to know whether the ulcerating lesion in his own stomach is malignant or not, and, therefore, it is highly desirable that gastric ulcer be treated with an entirely different viewpoint than duodenal ulcer and with the possibility of either an already existing malignancy or at least with malignant potentiality always in mind. I similarly believe that any chronic gastric ulcer which when given a reasonable length of time, and by that I mean not a too long period of time extending over a year or more, under controlled management without showing definite radiologic evidence of recession, should be excised and submitted to pathological examination. That such a procedure is rational in the majority of in-

stances where the gastric ulcer has not developed complications has been amply confirmed by Lahey and his co-workers.

Treatment and Prognosis:—Once the diagnosis of gastric malignancy is assured there is small question as to the type of treatment, namely, surgery. That radical extirpation is the only means of eradicating successfully gastric cancer is hardly controversial. That it should be instituted early and in as radical a manner as possible in removing the growth and glands in its immediate vicinity is axiomatic. Exploration of a gastric cancer, except in that small group of cases where the disease has so obviously progressed to a very marked degree that the general condition of the patient precludes intervention, should be the rule. Indeed border-line cases, I think, should be explored, for one is not infrequently surprised to find a large palpable tumor resectable and is gratified by an unsuspected length of comfortable existence.

The two aims of surgical intervention are cure and palliation and they may not be too widely separated in any one given case. At exploration one not infrequently finds a large tumor which may be removed in a widespread manner with a not too high risk and after the removal receive a pathological report of low grade malignancy and no glandular involvement. At least half of gastric cancers fall in the average grades of malignancy according to Broder's standard and many of them are of the colloid variety—both factors favorable to longevity. The size of a given tumor is not an index to its operability but its mobility and lack of attachment to neighboring viscera are.

Unquestionably resection for palliative purposes has a definite place in gastric surgery. It is likewise true that palliative resection usually is carried out with a higher risk than in the average case which will be resected with the purpose of cure. The experience of the surgeon and his technical skill and boldness as well as the condition of the individual who is to undergo the operative maneuver will decide this. Very infrequently I believe palliative gastro-enterostomy is desirable in an inoperable malignancy of the stomach where the risk is usually out of all proportion to the gain attained and not infrequently a lethal outcome is hastened rather than postponed. The actual operative risk of performing a palliative gastro-enterostomy is close to that of palliative resection and far from as serviceable a procedure in a large group of cases. It seems certain that few operations of this type should be employed—on the other hand a palliative resection in the presence of glands and occasionally even where hepatic metastases are found not infrequently prolongs life for a number of years, and what is more important prolongs life in comfort. Just as in cancer of the large bowel and rectum if one may safely rid the patient of the severely painful tumor mass which is producing obstruction it is a boon to the patient even if distant metastases are already demonstrable. Liver metastasis produces death without pain and this is a practical point not to be overlooked.

The radical operation which aims at cure is designed to remove as large a section of the stomach as is necessary and at the same time do a block dissection of the regional lymphatic glands. These glands are arranged in four groups: the suprapyloric, the subpyloric, and those of the greater and lesser curvatures. All the groups are easily accessible in the majority of instances, but it is necessary to remove a large portion of the stomach if one would get the glands on the lesser curvature radically extirpated. Large glands should be submitted to microscopic investigation before it is decided whether they are malignant and for this reason the palpation of glands extending toward the cardia and around the pylorus is an unreliable sign of inoperability.

Time does not permit that I go into any great detail concerning the technique of resection and anastomosis for malignancy of the stomach, but I do wish to discuss briefly some of the fundamental principles underlying radical surgery.

The methods best recognized as serviceable to most of us are the Polya type of re-

section or the Billroth II. In the former the resection is extensive and the anastomosis of the jejunum is made directly with the cut end of the stomach. In my experience this has proven the most satisfactory type of resection. The Billroth II has certain distinct advantages and when one is contemplating doing a two-stage operation it is admirable. Where gastro-enterostomy is done first and if the individual can stand the operation at first stage, the resection is readily carried out just as in the Polya type of anastomosis except that the end of the stomach is inverted —the continuity of the gastro-intestinal tract already having been established by the gastro-enterostomy. I question the advisability of employing Billroth I where the stomach is anastomosed to the duodenum in continuity for malignant conditions. It has a definite place in the surgery of benign lesions. Occasionally one finds a suitable case for complete removal of the stomach and establishment of the continuity of the gastro-intestinal tract by an anastomosis between the jejunum and the esophagus. While this formidable procedure may not be carried out except in the presence of certain types of tumors and where the exposure of the esophagus is made it is justifiable as a palliative maneuver. Usually the growth is a schirrus cancer of the linitis plastica type and the technical procedure a simple one. Not a large group of total gastro-enterostomies have been reported but occasionally one has the opportunity to perform such an operation and there are instances on record where the individual has lived comfortably for four years postoperatively.

Mortality following resection of the stomach in expert hands will range around 10% depending upon first, the selection of the case, second, preparatory preparation, third, skill and daring of the operator, and fourth, postoperative care.

Preliminary treatment consists in decompression of the stomach and institution of rehabilitation measures. A distended and hypertrophied stomach responds readily to frequent lavage and the general condition of the patient is advantageously forwarded by the administration of large amounts of fluids and frequently by blood transfusions. All measures to increase the general resistance of the patient over a period of three to six days are highly desirable, and it has been our experience that these measures may best be carried out in a hospital under the combined management of clinician and surgeon.

The prognosis in cancer of the stomach is affected by many factors, the most important of which in my judgment is the intrinsic intensity of the malignant invasion.

Broder's grading of cancer of the stomach, colon, rectum, lip, and elsewhere has proven, I think, the most important single yard stick of prognosis which may be applied to a given case. Several factors such as age, co-existing debilitating diseases, cardio-renal-vascular diseases, location, fixation, perforation, etc., all are modifying influences not to be discounted, but they are of importance prognostically in direct ratio to the grade of the growth. Glandular involvement which represents the extension of the malignancy is in direct proportion to the grading, and the higher the grade of malignancy the less satisfactory the ultimate prognosis. In a group of cancers of the stomach Broder showed 55% were grades 1 or 2—while only 10% graded 4. The fact that the majority of these tumors were relatively of low activity I think unquestionably influences the prognosis favorably. At the same time one out of every three cases showed lymphatic glands and this is distinctly an unfavorable sign: a direct result one might say of late diagnosis and disregard of insignificant symptoms.

It is quite simple to urge early diagnosis in these cases and yet how are we to accomplish this. Do we as physicians recognize the insignificant symptoms at an early stage in ourselves and take immediate steps to investigate them, or do we procrastinate as the laymen? In a review of forty-one cases which Alvarez has recently made of case histories of physicians who were explored for cancer of the stomach, he emphasizes the fact that we do not. Apparently the medical men when confronted with the situation themselves are al-

most as prone to procrastinate as the layman.

It is an unfortunate truism that the early symptoms of gastric cancer are very meager and insignificant and that perhaps the only reliable means of avoiding the stage at which the average case now seeks advice is to employ repeated fluoroscopic examinations especially in individuals where gastric symptoms are of the slightest importance. At the present time a relatively small group of the total of patients are seen at a time when the lesion may be removed with a hope of cure.

Balfour in an article in Surgery, Gynecology and Obstetrics—February 15th, 1932, pointed out that approximately 50% of gastric cancer seen at the Mayo Clinic over a period of ten years from 1910 to 1920 were operated on and in only 39.3 was the cancer removed. These figures represent 19% of the patients with gastric cancer who were seen. During the following decade, from 1920 to 1930, in 43.16% of the cases in which exploration was carried out resection was possible—this representing 22.6 of the patients with gastric cancer who were seen. He says, "The present situation, therefore, is that in about one-half of the cases of cancer of the stomach exploration is warranted, and in about one-half of these cancer can be removed. These figures mean that an attempt at cure can be made in less than 25% of cases of cancer of the stomach." We see then if we can operate upon only one out of every four cases as they present themselves with a possibility of cure, the situation is an unhappy one, but with the admitted curability by radical surgical means perhaps the future holds promise of an early diagnosis, and, therefore, a better end result.

Discussion

Dr. T. E. Vass, Bluefield: In discussing Dr. Rankin's subject, there can be little added to his paper. We can only emphasize a few points which should not be overlooked.

The mortality and the morbidity of gastric ulcers and cancer are entirely too high. The particular reason for the above condition is due to the fact that there are a large percentage of gastric ulcers and cancer that are not manifest until well advanced. Some of these cases of cancer, particularly in the pyloric end of the stomach, give practically no discomfort until mechanical obstruction begins to be manifest. I have only recently seen three inoperable cancers of the stomach with no pain; these cases consulting us because of weakness, which was caused by the secondary anemia and mechanical obstruction to the stomach. Early diagnosis in these cases must be made before we can hope to lower the mortality of same.

The question, as to whether carcinoma develops at the site of an ulcer or whether it is a carcinoma from the beginning, is worthy of discussion from the pathologist's standpoint, but, so far as the surgeon is concerned, very little can be gained unless we can diagnose these cases much earlier from a clinical standpoint, and especially in young people around forty and under, as the younger the patient is, the more rapidly this condition progresses. The prognosis in these cases is not good, and the reason for that is lack of early diagnosis. The radiologist has made wonderful strides in the last few years in recognizing these ulcers and beginning cancers of the stomach. Along with the development of the plates of gastric conditions, a fluoroscopic study should be made of every stomach that does not clear up rapidly from any slight indigestion or disturbance that may be present. Quite often, though, these cases without pain are not seen until the secondary anemia brings the patient to your office or a palpable mass in the epigastrium is manifest. Some of these cases will come with typical symptoms of gastric lesions, ulcers or beginning of carcinoma, with pain and discomfort, gaseous manifestations, and pain or discomfort on taking or the absence of food. About 25% of these cases have free hydrochloric acid in a normal or diminished amount, but the average case of carcinoma of the stomach has no free hydrochloric acid. They have occult blood in the stools and some defect in the gastric motility or in the contour of the stomach, with anemia, which is of secondary type and must be differentiated from a pernicious anemia in some of the most early cases.

I am inclined to believe that most of our gastric conditions are treated too long from a medical standpoint without operation to determine the existence or absence of cancer or ulcer. We do not hesitate to subject a patient to a diagnostic curettment for bleeding from the uterine canal. I see no reason why we should not carry out the same procedure of subjecting gastric cases to an explora-

tory laparotomy when we are reasonably sure of such being present.

Our principal difficulty in the mortality and morbidity with carcinoma and ulcers of the stomach is not with our treatment, but is with our methods of diagnosis. We are inclined to procrastinate too much with lesions of the stomach or intra-abdominal lesions of which we are not definitely certain.

The type of operation is of little importance, because it is almost impossible to say what procedure you will follow previous to meeting up with the condition that exists. You must fit the operation to the condition and not the condition to the operation. A large percentage of these cases at the present time are what we call the palliative or inoperable type, who are suffering from a stasis and mechanical obstruction. In doing palliative operations on these patients, it requires a good deal of insight into the patient's inherent qualities with relation to the existing disease to be able to see how much a palliative procedure will benefit this particular individual. Of course, the principal procedure in these cases is merely a gastro-enterostomy for relief of mechanical obstruction.

I am aware that carcinoma of the stomach is rather difficult to handle from the methods that we have at our command at present, as this is well illustrated by Doctor Rankin's reference to the report of gastric carcinoma of forty-one physicians as reported by Alvarez. The accuracy of the history and diagnosis in these cases was not any better, from a percentage standpoint, than in the laymen, so you can see by this report the difficulty in diagnosing this condition early. The whole outcome of your patient depends upon an early diagnosis, then, to a lesser degree, upon the age of the patient and general condition, technical skill and judgment of the operator, and the operation decided upon.

We appreciate and thank Doctor Rankin for this most wonderful paper, and we are pleased to hear his points of view along the lines indicated in hopes that we may lower the mortality of this dreaded disease a good deal.

Dr. R. J. Wilkinson, Huntington: I can add very little to Dr. Rankin's paper except to emphasize the importance of an early diagnosis. Too many of us are prone to treat symptoms without attempting to make a diagnosis. I was glad to hear Dr. Rankin say that these cases should be operated upon early, by radical resection, if they do not respond early to medicinal treatment. I would like to add a further word about the advisability of doing an entero-enterostomy following resection. I believe in many instances that this is a life-saving procedure. It should further be remembered that every upper abdominal lesion constitutes a major problem in determining what to do and how best to do it.

Dr. Rankin failed to mention post-operative treatment. In our experience we have found that a number of these cases who have persistent vomiting will be found to have a lowered blood chloride and by the administration of a hypertonic salt solution many of them will respond immediately.

Dr. Rankin, (closing the discussion). Enterostomy is most highly desirable as a complementary measure in many resections. I do believe that the abdominal condition must guide us in deciding whether or not to do it routinely. My own preference in doing carcinoma of the stomach is to do the resection posteriorly. That type is relatively simple in most cases and, of course, impossible in many cases. If you do the polyuria resection, make your loops as short as possible—that is the second loop of the duodenum as you put it across—and run from left to right. Then, if you suture the transverse colon it slips over so that you rarely need an enterostomy. On the other hand there is not the slightest objection I can see to doing a routine enterostomy in those operations. It is perfectly simple to produce good results if you use proper technique. Make the loop a bit longer when you divide the bowel to make the anastomosis, and it is undoubtedly a very desirable thing and I think probably a life-saving thing frequently. On the other hand if there is any difficulty about doing anastomosis I would prefer to do a Billroth No. 2 type of operation in the reverse of the order we are accustomed to. Frequently an elderly man, dehydrated and dessiccated, is adaptable to a gaströenterostomy. If there is no hitch in the operating room I would go ahead and take off the stomach and close the two ends. If there is a hitch, and the anesthetic isn't taken well, then let the second stage go for two or three weeks.

Vomiting following gastric surgery is very frequently due to an upset in the blood chemistry, and frequently an alkalosis develops which isn't recognized for some time. There sets in an old vicious circle which hasn't anything to do with the operation, so it is best to make a routine of knowing the blood chemistry both before and after the operation. If there is any upset we advise keeping everything out of the patient's stomach for 48 hours and he will be all right.

PRACTICAL POINTS IN OBSTETRICS*

By H. G. STEELE, M. D.
Bluefield, W. Va.

CHARLEY Hancock, one of the old merchants in Bluefield, talking before the Kiwanis Club a few years ago, his subject being "Fishing," said, "The more you fish the less you know about fishing." Likewise, the more you study your books and journals and practice obstetrics the more you realize how little you know how to deliver a parturient woman.

Therefore the writer of this paper feels his inability to discuss this subject intelligently before such men as you, the older practitioners who have had a wide practical experience, and the younger, thoroughly trained men, recently graduated from well-equipped medical colleges. He simply wishes to bring before you some practical points in obstetrics which may be overlooked or neglected from day to day and renew to some of the minds here tonight things forgotten years ago, as well as present some personal ideas for discussion to see if they are of possible value to the profession for the future. Some point or two might be brought out of value to one or more of you, while things might be said of no value to any one. I trust that you will bear with me for a few minutes.

A woman comes to you with a history of cessation of menses for two or more months and says, "Doctor, I have come to you to find out if I am in the family way or not?" And to decide this question for her, if you can, you ask her some such questions as these:—When was the first day of the last menstrual period? Was the flow present the usual length of time? Has she had any tingling sensation of the breasts? Has she been sick at her stomach, especially in the mornings or at the odor of food cooking, and if she is a multigravida, has she any symptoms now she had in any of her previous pregnancies, etc? She gives a history of the above signs and symptoms being present, but still you are not altogether satisfied that pregnancy exists. It is necessary for you to make the Schneider modification of the Aschheim-Zondek pregnancy test or a physical examination, or both, and determine the question for yourself. She may have missed one or two menstrual periods. She gives a history of having had a slight cold at the time of the first missed period, and she tells you she took a cold bath at the time of her supposed second period, which failed to show up, so you make a thorough obstetric examination and try to decide if she really is pregnant.

You examine her from head to foot, but the things in which you are mostly interested are:

1. Can colostrum be expressed from the nipples?
2. Has the primary and secondary areola of pigmentation darkened and increased in size?
3. Are the subcutaneous veins of the breasts more distended than normally?
4. Do you find the linea nigra present?
5. Can the uterus be palpated through the abdominal wall?
6. Do you find the characteristic cyanotic or livid hue of the musoca of the vulva and vagina along with an increased secretion?
7. On bimanual examination do you find a hypertrophy and softening of the vaginal walls and cervix?
8. Are the muscular walls of the uterus thickened and more flexible than normal?
9. Do you find Hegar's sign present?

In making the pelvic measurements you find the following:

Trochanters	31	centimeters
Crests	29	"
Spines	26	"
External conjugate	20	"
Right oblique	22	"
Left oblique	21	"
Circumference of pelvis	90	"
Diagonal conjugate	12½	"

*Read before the Fayette County Medical Society at Oak Hill on July 11, 1933

Estimated true conjugate.....11 "
Bi-spinous .....11 "
Tuber ischii.....11 "
Ant. posterior of outlet.....11 "

These mensurations are given in this order, that those who are not making pelvic measurements frequently, might more easily remember them than as they are given in most text books. Normal measurements vary a little, one way or the other, but the above are approximately correct.

Now, that a diagnosis of pregnancy of 2½ months has been made, proper foods, well digested and supplemented by fresh air and exercise, rest, sleep and a mind free from outside worries, are parts of every expectant mother's Bill of Rights. Exercise in the fresh air and sunshine is extremely essential and in my judgment aids greatly in preventing toxemias of pregnancy.

As a diet, she is advised to take soups of practically all kinds.

Cereals—all kinds, with preference given to whole grain cooked ones. Oatmeal, corn meal mush, natural brown rice, cracked wheat, and brans are among the best.

Vegetables in abundance, especially the leafy ones, lettuce, cabbage, celery, spinach, asparagus, brussels sprouts, and beet tops.

She should eat some leafy vegetables every day, cooked and raw. Also, potatoes, (sweet and white), peas, lima beans, string beans, tomatoes, beets and carrots. She should not eat meats oftener than every other day, beef, bacon, lamb or tender lean mutton, and on the days between, chicken or fish. Eggs are a good substitute for meat. Breads: Coarse breads are preferable; brown or whole wheat, or corn bread, are more laxative and more nutritious. Of the fruits, raw apples, pears, peaches, oranges, prunes, grapefruit, figs and dates are valuable. One half ounce of senna leaves stewed with a pound of prunes, having the patient eat 6 to 12 prunes daily, makes an excellent laxative, and is one of my frequent prescriptions. Milk, with cereals, in soups, on desserts, and as a beverage should be taken, and water, six to eight glasses daily is very essential. Use tea and coffee very sparingly, one cup a day. Cocoa and buttermilk are good.

When she returns to the office once every three weeks, up to the 7th month, and every 7 to 14 days thereafter, we ask the following questions:

Do you feel well or badly?

Do you have headaches or dizziness?

Have you noticed any blurred vision?

Do you have nervousness, insomnia, nausea or vomiting?

Do you have any heartburn or gaseous distention?

Do you have any abdominal pain, and if so, its location?

Are you bothered with constipation or diarrhea?

What is the quantity of urine voided in 24 hours? How about the frequency of micturitions?

Have you any vaginal discharge, and is there any vaginal bleeding?

Do you experience any dyspnea or palpitation of the heart?

Do you have any substernal oppression?

Is there any edema of the extremities?

Do you have any cough or expectoration?

Is there any pain in the chest, and if so the location?

Do you feel life?

Have you felt the baby drop?

In the latter three months the following also are noted:—general appearance, weight, blood pressure, height of fundus in centimeters above the pubic, lie and presentation, direction of the fetal back, location of the fetal movements, fetal heart, rate and site, station of the presenting part, and the location of the uterine souffle. In following this routine a careful watch can be kept on the urinalysis, height of the blood pressure, too rapid a weight increase, and the gravity of the fundus uteri.

It is believed by some writers when the fetal heart beats are from 115 to 125 per minute, in the latter months of pregnancy, and under normal conditions, the prediction might be a boy; while if they are from 130 to 145, it might be a girl.

It is important to locate, by auscultation, the position of the placenta, or the uterine souffle, in the 6th or 7th month and there-

after, if possible. This can be done is 70% to 85% of the cases, and the writer believes placenta previa can be detected, in a large percentage of the cases, weeks before the symptoms of placenta previa are manifested. If the placental souffle is heard in the right and left lower quadrants and a few centimeters above the symphysis pubis, this is very good evidence we are dealing with a placenta attached to the lower uterine segment, with a portion of it covering the internal os. This should put us on our guard and then we should be on the alert for painless, causeless, uterine hemorrhage, any time during the third trimester of gestation.

You might locate the placental souffle low down in the right or left lower quadrant, with the sound extending to, or near the median line, at the symphysis pubis, warning us that we are dealing with a marginal placenta previa, which might or might not produce a hemorrhage before the cervix begins to be effaced or dilate.

The writer reports having seen such a case (in 1921), and the ecchymotic condition of a small area of the margin of the placenta proved the diagnosis made by the aid of the stethoscope was correct. I have several times, within the last few months, located the position of the placenta, by auscultation and then in the third stage of labor, had to detach the placenta manually, and found it attached in the exact location as previously noted on the chart. On one occasion I auscultated the uterine souffle, several times, as I patiently detached the placenta manually, hearing the souffle become smaller and smaller in area, finally hearing it in an area about the size of a silver dollar, and as soon as the placenta was completely detached, that instant the souffle disappeared. Proving, without a doubt, the cause of the uterine souffle, and that the location of the placenta can be determined by auscultation, in most cases.

When the placenta is located low enough in the lower uterine segment to cause alarm it is advisable to be on the alert, send such a patient to the hospital within a week or two before her expected confinement, or at the first sign of hemorrhage.

If a vaginal examination has not recently been made, nor potential infection feared, a cesarean section should be advised, thereby both mother and baby should be saved, under favorable circumstances.

In case you have a hemorrhage, the symptoms of placenta previa manifesting itself and you are not prepared to perform a cesarean section, it is wise to pack the cervix and vagina tightly with gauze, then send the patient to the hospital, or wait and carefully watch for further symptoms.

It is my practice never to make a bimanual examination after the 36th week, except when necessary, or certain complications demand, and at time of labor, and only then, under the most thorough antiseptic precaution.

In the latter months of gestation we should in a majority of cases, be able to make, by abdominal palpation, a diagnosis as to the presentation and position of the fetus.

Now, suppose we have a longitudinal lie with a vertex presentation, it is necessary to determine, if possible, definitely the position we are dealing with.

While palpating the abdomen in a L.O.A. position the fetal back will be to the left of the median line, its heart sounds will be heard in the left lower quadrant, either high or low, depending on the head floating above the brim, or the degree of pelvic engagement, with the extremities felt on the right of the median line and the buttocks in the fundus uteri.

Suppose we hear the fetal heart sounds in the right lower quadrant, some distance to the left of the anterior superior spine, a vertex presentation, the round, smooth globular body, the back of the head, a little to the right of the symphysis pubis, the back of the fetus to the right of the median line, and the extremities to the left, it is decided that the position is R.O.A.

Again we find the whole fetus 90° further to the right, the fetal heart sounds heard in the extreme right iliac fossa, or possibly in the lumbar region, depending on the head

being engaged or floating, the anterior abdominal wall more or less flat, instead of bulging, as in the right or left occipito anteriors. The fetal extremities are easily palpable, through a reasonably thin abdominal wall; in other words, you will find little humps here and there in front of the body of the child in the anterior half of the uterus, and we conclude that this is a R.O.P. position.

A transverse presentation is determined by the lie being transverse to the body of the mother and a bulging of the head and buttocks to the right and left of the median line, out in the flanks of the mother. If we feel the humps, or extremities, of the fetus beneath the anterior abdominal wall, we will find the scapula posterior, a diagnosis of Sc.R.P. or Sc.L.P., and vice versa, when the back is to the front, we have a Sc.L or R. anterior. When the back is anterior we should hear the fetal heart sounds to the right or left of the linea alba.

The breech, when presenting, is usually slow in descending into the pelvic canal, and when a vaginal examination is made after it is well engaged the soft buttocks can usually be differentiated from the globular mass, the head, which can be palpated in the fundus uteri.

Multiple pregnancies are rather difficult to determine without the aid of the x-ray. But occasionally two fetal hearts can be located, and the outline of two fetuses may be palpated. The writer made a diagnosis of multiple pregnancy, seven months ago, not on hearing two fetal heart sounds, but on the enormous size of the patient's abdomen, being 144 cm. or 56¾ inches in circumference, detecting a large quantity of amniotic fluid, along with a history of five sets of twins among the relatives, on both sides of the family. One of these boys weighed 9 and the other 8 pounds.

Polyhydramnios is often associated with multiple pregnancy, and as much as 15 to 30 liters (4 to 8 gallons) of fluid have been reported. When a gravida gains more than 30 pounds during her gestation we may expect some abnormal condition is developing. At present, in the Bluefield Prenatal Clinic, we have a patient who has gained 52 pounds and still, from her history, she is but 34 weeks pregnant.

A diagnosis of polyhydramnios is all that has been definitely made out as yet. When the patient becomes uncomfortable in these cases, too much pressure being made on the heart and lungs, it is advisable to puncture the amniotic sac, through the cervical canal, and allow some of the fluid to escape slowly. I have seen the abdominal and uterine walls punctured, with a large trocar, and several liters of amniotic fluid allowed to run out. This operation may be repeated when thought advisable, to give the patient relief.

Tumors combined with pregnancy should be palpated while we are making the periodic examinations, in the early months of gestation. A few may be mentioned: the submucous, the subserous or intramural fibroma, the ovarian or intraligamentous cysts, etc.

In normal pregnancy of a primigravida, we find the fetus begins to descend into the pelvis at the end of the 38th week of gestation. At term, labor pains come on rather slowly, and on account of the passenger having to dilate the passage for the first time, and the mother not accustomed to, or well trained in this procedure, progress of the delivery is more or less slow, making the duration of labor from 16 to 20 hours; the first stage from 12 to 14 hours, the second stage from 6 to 8 hours, and the third stage about 30 minutes, while in a multigravida the duration of labor is from 12 to 16 hours; the first stage being from 6 to 8 hours, the second stage from 4 to 8 hours, and the third stage from 15 to 30 minutes.

You have all experienced some of your labor cases terminating in two or three hours, while some of them have lasted for two or three days.

Factors favorable to natural labor are:

(a) A high standard of general health.

(b) Stable nervous system with favorable or co-operative attitude.

(c) Normal powers of propulsion. [Primary and secondary].

(d) A passenger of normal size.

(e) A passage of normal dimensions and character.

Mechanism of Normal Labor: Refers to the various attitudes and positions assumed by the child during its passage and progress through the birth canal with its complete expulsion from the body of the mother.

Factors concerned in normal labor:

(a) Universal flexion.
(b) Gradual descent.
(c) Moulding of the head.
(d) Internal rotation.
(e) Extension.
(f) Restitution.
(g) External rotation.
(h) Birth of remaining portion of body.

In conducting a normal delivery, especially in a multigravida, we should proceed in an aseptic plan of watchful waiting:—"The modified Garden of Eden Plan", and interfere only if powers of the mother fail, or the presence of complications threaten the welfare of the mother or the baby, or both.

While delivering a primigravida with the head low in the pelvis or on the perineum for an hour and a half to two hours, and not making any progress, it seems better maternity practice to give the patient ether, do an episiotomy and deliver the child with forceps, than to allow it to remain there any longer, with the pressure of the uterine and abdominal muscles from above, possibly causing intracranial damage, as hemorrhage, destruction of brain tissue, or laceration of the tentorium cerebelli, which manifests itself in three or four days to a week, or more, by some of the following symptoms:

Restlessness, crying, refusing of food, inability to swallow, twiching of groups of muscles, of one whole side, or general tremors; especially of the lower jaw, signs of local irritation, for example:—chewing or sucking movements, irregular pupils, nystagmus, sharp, high-pitched, cramp-like cry, coma, cyanosis of the lips. Often fever, even 103° F, rapid and irregular respiration, rapid pulse, 160 to 180, prominent tense fontanels, convulsions, rigidity of the body, then paralysis with cyanosis, cessation of respiration, and finally of the heart beat.

While taking a post-graduate course, at Jefferson Hospital, Philadelphia in 1928, I saw one of these cases, manifesting some of the above symptoms, coming on after a hard delivery, and forceps were not used. At autopsy a tablespoonful or more of blood was found in the cerebellar region.

No doubt, a number of our babies, in the past have died from intracranial injuries unrecognized.

In suspected intracranial hemorrhage a spinal or cisterna puncture should be made and when blood is found in the fluid, 90 to 100 c.c. of blood is withdrawn from the mother's vein, citrated, and injected into the abdominal cavity of the baby. This has a tendency to check the intracranial hemorrhage; when the symptoms disappear and the babies get well in favorable cases.

It is my custom to give one half c.c. of pituitary extract to the mother at the end of the second stage, and one c.c. of ergot aseptic, or one c.c. of gynergen, which contains the tartaric salt of ergotamine, principal alkaloid of ergot, is given to the mother hypodermatically at the end of the third stage. Either or both of these are repeated in a short while if there is much uterine bleeding or the uterus does not contract properly, or the uterus shows any signs of remaining flabby in the least.

All lacerations of the perineum are repaired, with chromic catgut, before or immediately after delivery of the placenta:—No. 2 suturing the muscles and No. 1 the mucous membrane and skin.

In separating the child from the mother, clamp or tie the cord 4 to 6 cm. from the baby's belly; milk the blood in the umbilical cord with your thumb and index finger, 8 to 12 cm. toward the placenta, then clamp the cord, with a pair of hemostats, in this emptied area, cutting the umbilical cord between the tie, or fist clamp. This last applied hemostat prevents the blood, which is usually engorged in the cord, from spurting in all directions. On two occasions at the maternity

department of the Jefferson Hospital, Philadelphia, I saw the superintendent of nurses get her spotless white uniform bespattered with blood, when the cord was cut in the usual way.

The placenta usually comes away without much trouble. A little traction on the cord, ten to thirty minutes after the end of the second stage, assists greatly in its expulsion. Teach some of the bystanders to grasp the fundus of the uterus, and see that the fundus is held, with a slight pressure, for at least one hour after the placenta has been delivered.

When the placenta is retained or attached in the uterus longer than an hour, be certain you are not dealing with a placenta accreta, before you attempt to bring it away manually. The placenta should always be carefully inspected before it is disposed of.

Practically every physician drops a few minims of a 1% solution of nitrate of silver into the baby's eyes right after it is born. I don't think there is any advantage in using any of the other silver preparations.

It matters little if the baby is greased all over with olive oil, or vaseline and wrapped in a warm blanket, allowed to remain unwashed for a few hours, or over night, or given a good bath, and dressed, then wrapped in a warm blanket and placed, on its right side, in a crib, or in bed beside the mother, in a comfortable room.

Post-Natal Care

The perineum should receive a pitcher douche of a one percent lysol solution every 4 hours during the day, or after each urination and bowel movement. The perineal pad should not be worn after the first 24 hours.

If the temperature of the patient rises above 100.2° F. after the first 24 hours; especially if it remains that high or higher for two consecutive days, one should look for the cause of the morbidity.

The mother should be given a light or semi-solid diet for the first five days, after which it should be gradually increased to a full nourishing meal t.i.d.

Feed the baby by placing it to the breast 8 to 12 hours after birth. Therefore, until the milk comes into the breasts, the infant nurses every 8 hours, and then every 3 hours, unless it is frail, when it is fed more frequently, alternate breasts being used. If milk is slow in coming into the breasts, feed the baby cow's milk, one tablespoonful of milk combined with 2 tablespoonfuls of water, boiled for one minute.

The patients are instructed to sponge the nipples with boric acid solution before and after each nursing.

Make daily postpartum calls for the first five or six days, then every other day until the patient is allowed out of bed. The mother is examined on the 10th to the 14th day, at her home, or 4 to 6 weeks thereafter, at the office, as follows:—General appearance: breasts, nipples, gland tissue, lactation. Abdomen for hernia, diastasis, consistency of muscles, etc. Pelvic examinations: Vulva, introitus, urethra, Skene's glands and Bartholin's glands.

Perineum (Laceration of present labor.
(Lacerations of previous labors.
(Episiotomy.

Results of repairs (Faulty union.
(Fair union.
(Firm union.

Vagina (Cystocele.
(Rectocele.

Discharge (Amount
(Character

Pelvic Floor (Firm.
(Relaxed

Condition of levators. (Right.
(Left.

Sphincter Ani and Cervix.

Uterus: Consistency, height of fundus above the pubis, position and mobility.

The Adenxa, if palpable, and any abnormalities found.

SUMMARY:

1. Examine patients thoroughly at first visit.
2. Make periodic prenatal examinations.
3. Make diagnosis as to presentation and position by abdominal palpation.
4. Diagnose the location of the placenta in utero.
5. Give the patient postnatal care, which is almost as important as prenatal care.

THE CAUSES AND TREATMENT OF UTERINE BLEEDING*

By WM. NEILL, JR., M. D., F. A. C. S.
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HEMORRHAGE AT THE MENARCHE: The onset of menstruation in young girls is occasionally, and without demonstrable reason, excessive, amounting at times to a protracted menorrhagia. Hemorrhage at the menarche is one of the most puzzling problems with which either the general practitioner or gynecologist has to deal, one difficulty being that the condition lies in the genital sphere of a young woman, where there is a natural objection to the first pelvic examination. The cause is evidently endocrine dysfunction incident to the inauguration of menstruation or to some obscure factor difficult to assign to any pathological entity. Fortunately in the vast majority the tendency is towards self-correction under appropriate hygiene and medical care and for this reason any direct gynecological intervention should be withheld as long as seems wise.

As a preliminary to treatment a careful antecedent history, physical examination and blood study to determine the amount of anemia are indispensable. Relative to this condition we frequently find some definite hidden infection in the nose, nasopharynx, teeth or tonsils to be corrected. The condition of the thyroid gland should be borne in mind and also any general constitutional disorder, such as tuberculosis, Hodgkins disease, primary anemia or malnutrition. After a thorough course of rest, general hygiene and proper nourishment have failed, this recalcitrant group, which I am glad to say is small, must be considered from a gynecological standpoint.

Here, an examination, always under gas anesthesia should be made, definitely to determine any local pelvic disease; finding none, we are justified in limiting treatment to a dilatation and curettage, continuing with the medical care. Where this proves to be no more than temporarily effective we still have other recourse than more drastic surgery, which has had to be done in the past, such as repeated curettage, suspension of the uterus and even hysterectomy.

For the past twenty years in a small group we have resorted to the use of radium. Let me introduce this with a word of caution since, if improperly administered and in too great dosage, it is just as capable of permanently stopping menstruation as double ovariotomy. Over these years our entire group of young women treated with radium for uncontrolled adolescent bleeding comprises only thirty; twenty-four of these had previously undergone from one to four dilatations and curettages, while six had had uterine suspension, without lasting benefit. The radium treatment is given by the intrauterine route, under gas anesthesia. The modus operandi by which radium controls menorrhagia is not understood; it undoubtedly is due to a direct action on the ovarian follicles, preventing ovulation, as well as upon the blood vessels of the endometrium.

Summary: Only patients in this group not helped by customary methods of treatment should be accepted for irradiation and then only when health is threatened from hemorrhage. There has been no impairment to health in any way attributable to radium treatment. A wide experience with radium is necessary before one is justified in using this agent in the treatment of adolescent bleeding. I am sure the medical profession has long since given up the hope of finding a regulative drug for this condition and, while it is possible that in the near future some hormone will be developed, up to the present time it has not been discovered.

Menopausal Hemorrhage: In older women the end of the reproductive function

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occurs at a more or less definite period called the menopause or climacteric which begins at about forty years but varies in individuals and races. Local and general signs normally characterize this period, the local being confined to manifest retrogressive changes in the reproductive organs and the glands of internal secretion, while functional disturbances affecting the general organism are flushes with alternating heat and cold, increased nervousness, indigestion and a variety of psychic disorders, the vaso-motor derangements being the most important.

As a rule the menopausal period runs its normal course from one to several years without excessive hemorrhage or exaggerated symptoms. Most women pass through this epoch and its irregularities needing as treatment only rest during the continuance of the bleeding. The intervals of the bleeding tend to become longer and menstruation less profuse. Excluding the pathological lesions, that will cause excessive bleeding at this time, such as polypi, myomata, inflammatory conditions and malignant disease, the cause, in the absence of a definite demonstrable lesion, is unknown. Among the theories suggested are unequal ovarian activity, fibrosis of the endometrium, arteriosclerosis of the uterine vessels, or faulty internal secretion. In a small but definite residual group the bleeding is often so excessive and intractable as to provoke grave systemic disturbance. The patient loses her health and maybe even life itself when the loss of blood is so severe that the hematopoietic organs become impaired to the extent of fatal aplastic anemia.

The accepted method of treating such severe hemorrhage until recent years has been necessarily surgical. A thorough dilatation and curettage, with the accompanying medical care, often effected a cure, but, failing in this, we were too often forced to extirpative measures. It is in behalf of this group that I speak for a better treatment in the use of radium. Radium therapy answers all requirements for perfect relief, reducing the risk of treatment to that of curettage. Here the object is permanently to stop menstruation and bring on the artificial menopause, which is contrary to the treatment given the younger women, where it is so essential that menstruation be preserved. A careful history, physical examination and blood study are indispensable. Cases presenting evidence of acute pelvic inflammatory disease should not be accepted for treatment until this has subsided. The treatment which we might now call a specific in this condition is best given within the uterus. Prior to treatment the patient is examined under gas anesthesia and a thorough dilatation and curettage done. Immediate examination of the tissue under the microscope rules out malignancy and if a submucous fibroid is present, it can be twisted off and removed at this time. One application is usually sufficient; there is no risk and it is indicated in all cases where there has been no response to the customary methods of treatment.

In an experience embracing 1500 intra-uterine applications, not only in the type under discussion, but in uterine fibroids as well, I have never seen a malignant condition as a direct sequel, nor am I aware of any authentic case. The patient is kept in the hospital from two to four days and then allowed to go home, if she lives nearby, to rest in bed another week. The worst discomforts are nausea, malaise and occasional uterine cramps, rarely persisting beyond 24 to 48 hours. Those who are exceptionally anemic naturally remain much longer, receiving blood transfusions and any other care indicated at the time.

Summary: With a single treatment a complete cessation of the hemorrhage can be effected. The local and general symptoms are usually of a shorter duration and less pronounced than in the unprovoked menopause. There is an invariable improvement in health, and feeling of betterment.

Benign Uterine Fibroids: Uterine fibroids are the most common of all pelvic tumors, possessing striking characteristics, and may cause no symptoms at all, or produce a multitude of complaints. They are more common after 40 and vary in size and rapidity of

growth. The large abdominal tumors rarely cause the excessive hemorrhage met with in the smaller type. Fibroids are prone to prolong menstruation and delay the menopause but when the latter is established there is a tendency for them to cease growing and decrease in size. They are more common in the colored race. Sarcomatous degeneration, exceedingly rare, is incurable by any method of treatment, while malignant changes of the endometrium and cervix are not uncommon but of no greater frequency than in the normal uteri. Originally all abdominal operations for fibroid tumors were done through error in diagnosis, and it was the custom in this early time upon opening the abdomen, following a diagnosis of ovarian tumor, and finding instead a fibroid of the uterus, to abandon the operation because of the belief that such tumors were inoperable. The first to have the courage to remove the uterus was Charles Clay of Manchester, England in 1843, just 34 years after McDowell's first ovariotomy, from which all abdominal surgery had its origin. This patient died of post-operative hemorrhage, as did his second, operated upon one year later. The first deliberate hysterectomy, with a correct pre-operative diagnosis, was performed in this country by Kimball of Lowell, Mass. in 1853. Lawson Tait, in 1872, advocated the removal of the ovaries alone as the operation for fibroids, noting that these tumors often decreased in size after the menopause. The electrical treatment of the French school which proved unsuccessful, was not adopted in this country. So, from the beginning, the types of treatment for uterine fibroid have been many and varied. Among the palliative measures known to all are the drugs ergot, stypticin, calcium lactate, ovarian extracts and various glandular preparations, as well as hygiene, rest in bed, cold to the abdomen, with minor surgical procedures, such as curettage and local applications to the endometrium. Expectant drug therapy no doubt has been the indirect cause of death to no small number of women through the anticipation of its stopping the bleeding, the patient in the meantime dying of hemorrhage. Thus the only effective method of treatment of such tumors from early days up until the past two decades was surgical removal, and the operation in experienced hands has become one of the safest of our major surgical procedures.

During the past 15 years radiation has been used by the gynecologist in the treatment of fibroids with success, the favorable results increasing pari passu with the proper selection of cases and perfection of technique. The indications for treatment of fibroids depend upon the general condition of the patient and the symptoms presented, following an accurate diagnosis, including always a diagnostic curettage with immediate microscopic examination. We have today the choice of one of the following plans: 1) let alone and observe; 2) operate and remove; 3) radiate. The "let alone and observe" plan, as yet not often recommended by physicians at large, is, I believe, the best in many instances. Where there is no obvious disturbance to health, interference is unnecessary except for occasional observation. The second choice, "operate and remove", is indicated in the following types: 1) large tumors and those of rapid growth; here there is always an uncertainty of diagnosis without exploratory incision; 2) large tumors associated with pain; 3) tumors accompanied by pelvic inflammatory or any well-defined lateral disease; 4) all tumors accompanied by malignancy of the uterine body or cervix; 5) impacted tumors, markedly interfering with urinary function; 6) calcified tumors causing symptoms; 7) where there is reasonable doubt as to the exact diagnosis. Myomectomy is limited in its execution to a single or several definitely isolated tumors; this operation is not always satisfactory but is to be considered in the childbearing period. The third choice, "radiate", I believe is indicated 1) in all uncomplicated tumors with hemorrhage, reaching as high as the umbilicus; 2) in all of the operative group where the patient is not a good surgical subject. It will accomplish the following: Control hemorrhage and check menstrua-

tion; reduce the size of the tumor and in the majority of instances cause its complete disappearance. It is exceptional for fibroids to decrease in size without cessation of menstruation and therefore in using radium it is necessary to bring on a complete amenorrhea in order to secure a satisfactory result. An accurate pre-treatment diagnosis is more important when radiation is considered than operation. A submucous fibroid or intra-uterine polyp should be removed at the time of the treatment which is given by the introduction of radium directly into the uterine canal. One treatment is usually sufficient and the patient is kept in the hospital three or four days and if she lives nearby, returns home for two or three weeks in bed. The worst discomforts are nausea, malaise, uterine cramps, slight elevation of fever, rarely lasting over 48 hours. When hemorrhage has persisted for a protracted period, prolonged hospital treatment is necessary, with blood transfusions just as when a hysterectomy is to be done. The same symptoms occur as with the normal menopause and in the vast majority are less pronounced than in the normal cessation.

Summary: It is obvious from what has been said that there are definite fields for operation, radiation and let alone. There is too much interference with fibroid tumors on insufficient indication. Each should be given most careful consideration and the method followed which seems logically to meet the necessity of the individual case. The absence of mortality and the greatly lessened economic disablement, particularly in those who must work for a living, favors radiation as first choice.

Carcinoma of the Uterine Fundus: Malignant changes within the uterine body with few exceptions are adenocarcinoma, originating in the endometrium. Other growths than the rare sarcomata are usually a direct extension from the cervix or adjacent viscera. The disease is rarer than cervical cancer, grows more slowly and tends to remain restricted to its primary corporal origin. The ratio in our clinic is one carcinoma of the body to fourteen carcinomata of the cervix. It is an affliction of later life and the cause, as in cancer elsewhere, is unknown. There are no definite statistics as to the influence of race in this type of cancer. It is seldom found in the full-blooded American Indian, while in the Mongolian, pelvic cancer is common. In the negroes it is exceedingly rare, while cervical cancer is more common among the negroes than the white race. Among the Jews, who usually bear many children, it is rare to encounter a cervical carcinoma, while cancer of the body occurs with the same frequency as among the Gentiles. Contrary to the general belief that myoma is often associated with body cancer, we find but 12 in a series of 1000.

In the early development of adenocarcinoma of the body of the uterus the predominant symptoms are leucorrhoea and bleeding. Severe hemorrhages, as encountered in benign fibroids, are rare. Similar signs are common to a variety of benign diseases. An accurate diagnosis is easily made by due attention to the history, coupled with a physical exploration. It is impossible to place too much emphasis on the importance of early curettage and microscopic study of tissue. If a pathological laboratory is not available in this section, we would be glad to make these examinations in Baltimore for a small charge and, if the patient is poor and the doctor himself makes no charge, do so without cost, by receiving the specimen in a wide-mouthed bottle, preserved in 10% formalin solution and carefully labelled.

When the disease is limited to the uterus there are two possible methods of successful treatment: 1) radical operation; 2) radiation. Operation is safe and satisfactory in the majority and recommended in the absence of any well-defined contraindication. In those patients where operation is impossible, due to some grave constitutional complication, there is a definite possibility of cure by radiation, and in this group where we have treated by radium alone we have found our cure rate equal to that previously obtained by surgery,

although we still advise operation when there is no contraindication.

Summary: With uterine body cancer, as with malignancy elsewhere, the greatest hope for cure lies in early diagnosis. In early cases we still recommend surgical removal and in the inoperable radiation offers distinct palliation and even an occasional cure.

Carcinoma of the Cervix: The essential factor for laymen, as well as physicians, is that cancer arising in any region of the body is primarily a local disease and curable if removed while in this stage. This applies especially to cancer of the cervix. Watery and bloody vaginal discharges are associated with the idea of malignancy, not only in the minds of most doctors but of most women. In spite of this and also of the knowledge that the hopeful time to treat cancer is in its incipiency, it is nevertheless true that as yet a large proportion of these patients come first for help in the advanced stages of the disease. In spite of the vast propaganda carried on by the lay press and magazines, as well as by medical associations, there has been but little improvement in the number of women consulting their physicians when the disease is still limited to the cervix. This is one of the most deplorable situations that we have to face in medicine, for cancer, one of the most readily curable of all chronic diseases in its early stage, is rarely seen before it has passed beyond the local growth.

As is true of malignant growths elsewhere, cancer of the cervix is most common after 40 years of age. This well-recognized age period, however, should not prevent us from being suspicious of cancer of the cervix at all times when a patient complains of irregular bleeding and discharge, as quite frequently we meet with cancer of the cervix in patients much younger. The youngest case I have personally seen was in a young girl fourteen years of age who consulted me with a most extensive growth; she lived only a short time, as nothing could be done.

The most important aspect in regard to the treatment of carcinoma of the cervix is early diagnosis. After introducing the examining finger into the vaginal cavity and finding an obviously bleeding friable cervix, we can at once be fairly certain of cancer. Not in any way to confuse it with a sloughing uterine polyp, a small clipping should be taken for microscopic study. We know that other conditions affect the cervix and might be mistaken for cancer, such as erosion, tuberculosis, syphilis, sarcoma and various types of polypi. If the patient is fat and resistant, or any doubt arises, it is essential to give an anesthetic to secure complete relaxation for examination. My own personal position as to treatment of carcinoma of the cervix is as follows: Surgical removal, even in very early cases, has a high operative mortality, variously estimated from 12 to 18%, but a substantial cure rate. In moderate involvement of the parametria and vaginal wall the mortality rate is increased and the permanent cure rate markedly decreased. In wide parametrial involvement the mortality is necessarily much higher and a cure unknown. With radium there is no mortality. In early cases the cure rate in our clinic in over 1200 is 52%, while the best statistics obtainable from surgery show 32%. In the borderline cases treated with radium the cure rate compares with the surgical cures in the early group, i.e., 31%. In the totally inoperable cases, where a percentage of 1% would be welcome by any form of treatment, the radium cure is 9%. In a hitherto hopeless group, namely the recurrent, post-operative cancers of the cervix, we have obtained a permanent cure rate of 10%. Where the disease is far advanced, with obvious widespread metastasis, there are no clinical nor permanent cures but palliation and relief of hemorrhage and pain can often be obtained by radiation.

The treatment with radium is given by a direct topical application to the growth itself, as well as inserting tubes in tandem throughout the length of the cervical canal, together with thorough x-ray about the pelvis. The immediate effects of the treatment are nausea, general malaise and elevation of temperature, usually lasting from three or four days to a

week. Fortunately the vaginal mucosa tolerates radium effects to a high degree, but the rectum is quite ray sensitive and, due to its close proximity to the cervix where the radium is applied, distressing symptoms of proctitis are difficult to avoid and when present may persist for three or four weeks.

Summary: The hope of cure lies in an early diagnosis. Symptoms from carcinoma should not be confused with the menopause. Insist on a vaginal examination. In the early, definitely operable cases, with the disease limited entirely to the cervix, either radium or surgery is justifiable. In any group beyond this point I feel that surgery is out of the question from the standpoint of many cures. In a large personal experience with both surgery and radium treatment I have come to the conclusion that I will never again operate on any patient for carcinoma of the cervix. I have not performed this operation in the last five years and feel that all have a better chance for temporary or permanent relief through radiation alone.

SOME TRENDS IN MEDICAL ECONOMICS*

By R. G. LELAND, M. D.
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"CAPITAL," as the term is used in the economics of modern industry, is an investment with the expectation of a financial return, through hiring laborers and organizing and managing a financially profitable industry. Upon this use of the word has been built the elaborate theories of economics, the implications of which can only with great difficulty be disassociated from the word. It naturally follows that most of those who use this term in discussing medicine, instead of avoiding these implications accept them, and reason as if the use of the word necessarily gave these economic theories full validity in the field of medicine.

The existence of office and laboratory equipment, scientific instruments, library, automobile, telephone, etc., in which a modern physician must invest properly to conduct his practice, involves none of the relations, functions or implications which accompany the ownership of "capital" in the industrial sense. The physician's equipment is intensely personal to him in ownership and operation, whereas it is just the complete absence of any personal relation or ownership between industrial capital and those who use it that is most characteristic of the present system of industry. Nor, as some writers have attempted to show, is the individual practicing physician in the outgrown "household stage" of industry, from which he is inevitably destined to evolve, according to the pattern of industry, into the "domestic" and ultimately to the "factory" stage of mass production. He is not "producing" for his own family, nor sending out goods into a market whose inevitable growth to national, or even world extent compels him continuously to expand.

This confusion is increased when the cost of his education is added to the physician's "capital" account. There is logic in insisting that this expense be considered in determining the cost of preparation for the profession and thereby constituting an economic check on the supply of physicians, with whatever effect that will have on incomes. This is something wholly different from classifying such costs as "capital" upon which the current rate of interest must be paid if the "firm" is to continue in business.

It is the personal character of the physician's investment which is significant. The owner of stocks and bonds usually never sees the property to which he has title. It may be on the other side of the world. He buys or sells it with no effect, other than financial, upon his life.

*Read before West Virginia State Medical Association, Charleston, May 24, 1933.

The physician's investment in education and training is a vital part of his life. Its attainment and possession affords him satisfactions entirely apart from its income producing qualities. He cannot buy or sell it in any market apart from himself. If it is outgrown or rendered "obsolescent" he cannot rid himself of it by "writing it off" some balance sheet. Because it cannot be used by anyone else it lacks the characteristic quality of industrial capital—it cannot compel the labor of others.

The real medical capital, consisting of accumulated knowledge, is stored in the minds, ideals and traditions and in the publications of the medical profession and is shared freely with the public through universities, journals, discussions, the public press, radio and individual consultations. This capital cannot be monopolized for profit. It does not fit into the capital concept of industrial economies, yet it is the greatest asset of the profession. Without it all physical capital would be worthless.

This widening and deepening stream of knowledge has followed no fixed course. It has, unlike industry, established no definite pattern of evolution. Some of the great medical discoveries came through the use of elaborate and extensive equipment. Others, equally great, were the achievements of lone workers, with almost no equipment. Many searchers for new contributions sacrificed their lives in the struggle.

The dominance of the "professional knowledge capital" is of primary importance in the development of any program of furnishing medical service, including hospital care. Unless this immaterial "capital" maintains its dominance over the physical capital in any such program, the service itself suffers. The physical capital must remain the instrument wielded by the personal skill and knowledge.

Notwithstanding this personal element in the practice of medicine, there are certain commercial organizers and promoters and others who, sensing the universal importance of, and necessity for, medical care and utilizing the popular discussion about the *costs* of medical care are developing mass production schemes out of which they may derive a profit. Most of these schemes are too well known to need any description at this time.

It is significant that this attempt to capture and commercialize the professions by the use of mass production methods in the marketing of medical and hospital care should appear just when industry and business are endeavoring to incorporate into their methods some of the characteristics of the professions. At the present moment, efforts to "professionalize business are being directed by trade associations, legislation and a host of semi-public bodies and interested individuals in an effort to restrain some of the excesses of business.

The claims of organizers and promoters that only those trained in commercial organization and promotion can efficiently and economically market medical service under these new proposals is entirely unconvincing when one examines similar endeavors abroad. In England there are today between 5,000,000 and 6,000,000 contributors to voluntary hospitalization plans. The cost of administration in these plans varies from 3% to 10%. There are no paid high pressure salesmen who depend upon volume, clever sales talks, misrepresentation, underbidding and perhaps coercion in some instances, for their commissions. Nor is it by any means impossible to cite instances in the United States in which civic and relief projects are being maintained with creditable success by thousands of individuals whose primary motive is not personal financial gain.

The motive which underlies a project is one factor—which often insures success or failure. It has never been shown that the introduction of commercialism in medicine accomplishes the highest ideals of the medical profession. On the other hand, commercialism usually means a deterioration of medical services and a disruption of the medical profession; either of these results are inimical to the best interests of the public.

During the past one or two years the American Medical Association has been fre-

quently and not too tenderly criticized for failure to bring forth for the entire United States, a master plan to be used by county or state medical societies for a reorganization of medical practice. A careful examination of such a proposal should convince any fair and open-minded physician that it is utterly impossible, impracticable and unwarranted for the American Medical Association to adopt such a procedure. To adopt, publish and recommend "a plan" would be to infer that a change is necessary in the tested and proven methods of medical practice, but the arguments in support of the necessity for such a change have thus far been unconvincing. To assume such "a plan" devised to illustrate a "model or typical or master method" of practicing medicine is utterly absurd. The several sections of the United States differ widely as to population, industry, age, customs, traditions and many other features. To urge a single new method and thereby to infer that the present methods are unsound and should be discarded or altered would be to hasten or precipitate that sovietization of medicine which the medical profession is seeking to avoid. All advocates of commercial medical schemes, involving complicated, top-heavy overhead organization, expensive administration and unethical solicitation should be required to present their true credentials to indicate the nature and extent of their extra-professional interests and affiliations and the manner in which they expect to profit financially, politically or otherwise in the promotion of these fictitious, artificial and economically and ethically unsound proposals.

Wherever the control of the practice of medicine has been wrested from the medical profession, it is found that either the public or the profession or both are dissatisfied with the result. Conversely, it is found that in those countries where the medical profession retains control of the practice of medicine both the public and the medical profession seem to be satisfied.

In the mad rush to provide a new method of administering medical care there seems to be an almost entire absence of demand from the working classes for this medical revolution. The worker has for years declared that were he given an adequate living wage he would be able to provide his own needs and services. Most of the schemes proposed by these commercial organizers and promoters, ostensibly for the benefit of the low income group but likewise equally important for the promoters' own selfish monetary advancement, depend upon the small regular payments from this low income group for their success. It should be clear, therefore, that it is the less fortunate class for the most part, that is being called upon to contribute the 20% to 75% overhead cost of underwriting, administration and profits. Obviously if 20%—75% of the poor man's dollar goes for administration and the profits of the money-greedy promoters, this same dollar cannot buy but 25% to 80% of the medical service for the poor man that his money ought to buy. This surely is an economically unsound method of reducing the costs of medical care to the low income groups.

Not only is the person of low income thus deprived of the full value of his dollar but the medical profession and the hospitals share, to a correspondingly lessened degree, in the available funds collected by these commercial promoters to pay for their services. It should be clear then, that it is the low income group, the medical profession and the hospitals that contribute handsomely to the support of these artificial and parasitic medical schemes.

An analysis of the numerous proposals and operating schemes indicates that in most cases the economic principles which apply to the practice of medicine have been wholly disregarded. For example, (1) these commercial conjurers are not concerned over the fact that as the commercial interests secure an increasingly larger portion of the medical market, using only a comparatively small number of physicians to do their work, it becomes increasingly difficult for the physicians in independent private practice to secure enough patients to maintain themselves re-

spectably. Furthermore it will become almost impossible for recent graduates in medicine to establish themselves in practice at all. (2) The disappearance of professional control is of no importance to the promoter—in fact, his scheme is often specifically designed to transfer such control from medical to lay groups. (3) Since he has no understanding of medical traditions, ethics or science, the commercial promoter is unprepared to appreciate quality of medical service; therefore the quality of the medical care, and in some instances the quantity, is reduced to conserve his, the promoter's, funds, since competent medical personnel cost him more than a less competent staff.

There never has been a time in medical history when certain obligations upon the medical profession have been more clearly defined. One of these duties is, obviously, to resist all efforts to commercialize medicine. Commercialism of medicine means a deterioration of medical service and a disruption of medical organization. The evils and effects of commercial mass production methods are as inimical to the welfare of the public as they are to the advancement, freedom and independence of medicine. The history of medicine records an enviable record of brilliant achievements and the application of numerous humanitarian measures almost entirely devoid of the element of personal aggrandizement and individual monetary gain. During the past several decades the medical profession has advanced tremendously in its ability to cope with scientific problems. It is unbelievable that a profession which has demonstrated such ability in the scientific field will now, because of the pressure of profit-seeking propagandists and the exigency of a general economic unrest, surrender the control of the practice of medicine just when professional control is most necessary. The medical profession can and must cling to and defend, for the public good, all those elements of medical practice which demand a high quality of medical care and an ethical conduct of its members.

A further problem lies in the fact that as the number of physicians in the United States increases, professional competition will become more keen. It cannot be stated just what number of physicians will represent the saturation point for physician's services. Communities vary in their requirements but with modern conveniences and equipment the same number of physicians are able to serve more people now than ever before. If professional competition is to be prevented from becoming destructive, two alternatives are open,—either the number of new physicians licensed annually must be brought more closely to equal the annual loss by death and retirement or the medical profession must develop the greatly unusual fields of preclinical medicine. Certainly economic relief and professional independence for the medical profession cannot be assured by the acceptance of lay-promoted commercial schemes.

To lessen the standards of the principles of ethics would be to cheapen and reduce the quality of medical care. To change the principles of ethics to satisfy certain conniving cliques would be to sell out to commercialism. To lower the standards of medical conduct would be to allow medicine to become a mere trade.

The principles of medical ethics are neither antiquated nor obsolete. These principles must govern in the practice of medicine now as never before. I believe that most physicians concur in the value and the interpretation of the principles of ethics in medicine and it is this majority who must compel their general application.

The quack in medical economics sees in every scheme either a panacea or a poison. The scientist studies each new plan as he does a new practice or a new drug to determine its helpful or harmful features and how it can be utilized in existing practices and pharmacopœias.

The correct diagnosis and treatment of a medical economic problem should proceed along the same general lines in economics as in medicine. Social problems are often more complex and require no less research than the problems in other fields, and economics, no

more than medicine can prescribe a panacea for every disease it can diagnose.

It is 300 years since Galileo originated the experimental scientific method of acquiring knowledge, and whole fields of thought and action still go on as if he had never lived. Economics and politics are only just beginning to follow scientific methods. But during that period of 300 years even the very limited application of that method has added more to human knowledge and human progress than all the centuries of dogmatic rationalization.

Economic quackery in its relation to medicine flourishes best during periods of social and economic stress. During such periods the tendency to establish unsound and dangerous methods of administering medical care is greatest. It should be obvious, therefore, that all proposals to change medical practice during troublesome times must be subjected to the most searching examination, in order that the time proven principles of medicine shall not be destroyed.

The medical profession must resist as it never has before all attempts to wrest the control of medical practice from the control of physicians whether that attempt come from outside the profession or whether it be aided and promoted from within the profession. Some of our gravest dangers lie in the actions of members of our own groups who would sell the entire profession short.

If medicine be at the crossroads, then surely the medical profession and NOT commercial conjurers must select the correct course. And this selection will be made in the interests of the public no less than for the continued freedom, independence and self-respect of medicine itself.

Discussion:

Dr. Norman R. Price, Marlinton: At a time of depression in the whole structure of business, when a large percentage of the people find it difficult to finance even the simplest form of medical attention, there is an eruption of many weird plans for the stabilization of medical practice. An evidence of this is the interest of the profession and public in discussions of medical economics in all its phases. The American Mercury for March contains an excellent editorial by H. L. Mencken giving the layman's point of view of what is wrong with medicine in the United States. The efforts of government and business to order the affairs of medicine add to the confusion which exists in the art, science and practice of medicine today.

Dr. Leland has accented the intensely personal nature of the education and training of the physician, which in no sense can be referred to as "capital", although such reference is frequently made.

The present-day trend is undoubtedly toward some form of state and capital control of physicians in their relation to the public health, which has growing support among eminent medical health administrators. Even the praiseworthy and often necessary work of the public health boards, such as physical examinations and free immunizations, logically tends to free visits, medicines and hospitalizations for all, and an insistent public demand for such services.

The spirit of communism has developed unchecked during the past few years of industrial stagnation and financial impotency, and of course so important a department of public welfare as that of medicine is inextricably bound up in the movement. Sovietism, as applied to medicine, offers no comfort to the physician, who, along with the lawyer and the priest, is put on the social and economic plane of the laborer, as is done in Russia today.

I see no remedy, save in the ancient wisdom that "there is nothing new under the sun;" and when the present trend of experimentation in medical administration and practice has run its course there will be the usual return to conservatism. All human history exhibits the same curious trend of a return to normal after periods of over-expansion in business.

Mr. Joe W. Savage, Charleston: We hear a great deal on all sides about medical economics, the costs of medical care, the inroads of quackery and the annual bill for nostrums. All this discussion can be boiled down to the problem of any individual and any doctor with a bill between them for services rendered. There has never been a time in the history of any country during which a person in modest circumstances has enjoyed paying a bill "for services rendered." In a period of depression such as we now have the situation becomes actually acute. The doctor's bill is the most unwelcome of all be-

cause everything connected with a doctor bill is unpleasant. It results from unpleasant and unfortunate experiences. It is during such times as the present that we forget our problem has been with us always, and we start out in search of a panacea. We are never going to find a cure-all for this question of medical economics, just as there is no cure-all for medical science.

Dr. Leland stated that medicine had reached the cross-roads. I don't think so. Not long ago I was reading a paper that was delivered sixty-six years ago when the West Virginia State Medical Association was founded at Fairmont. The essayist laid great stress upon the fact that medicine had reached the cross-roads. On down through the years we have heard the cry, "Medicine has reached the cross-roads." I think medicine passed the cross-roads years and years and years ago. During this period of depression various by-paths and lanes have led away from the beaten track, but these lanes and by-paths have not been cross-roads because cross-roads lead somewhere.

I think we have plenty to worry about, but I don't think we have much to fear. Dr. Leland spoke of the number of graduates who annually receive the degree of Doctor of Medicine from the medical colleges in this country. I would like to ask him what is being done by the American Medical Association and other organizations toward correcting the existing situation, and what success is being met with.

Dr. Leland's paper has given us all much to think about and we have been unusually fortunate in having him with us. His paper is not only timely but one of the best discussions on medical economics we have ever heard.

Dr. Leland, (closing the discussion). The subject of limiting the number of physicians licensed each year was discussed at the February meeting of the Council on Medical Education, Hospitals and Licensure of the American Medical Association. This question will take a considerable amount of time and education to bring about. There is a question as to what extent the state universities, supported by taxpayers, can limit the number of students entering a particular college. The private medical school can probably do more in a shorter time than a state college. However a number of deans of medical schools are now considering favorably the idea that the number of graduates ought to be limited.

I firmly believe that the American public wants its own physicians. They do not, as a whole, want a machine to treat them. There are certain types of individuals who, not having grown up with our American ideals, are exceptions. They do want machine methods and there are attempts being made to make such methods attractive to them. Unfortunately there are physicians who have lent themselves to forwarding and promoting some of these schemes. Without physicians these schemes would fail utterly and immediately.

I do not think there is nearly so much wrong with the practice of medicine as we have been led to believe by some of our friends here and there. I believe that if physicians will practice medicine as they know it ought to be practiced, honestly and conscientiously, most of our difficulties will disappear. I believe that now is the wrong time to adopt any revolutionary methods in the practice of medicine. We are always sure to be expected to care for the indigent sick. However it has been demonstrated in two or three states that this can be changed. That is one place where all medical societies may find a field for work. It is society-at-large that ought to pay for the medical care of the indigent, and I think you are perfectly justified in initiating measures to bring that about. I firmly believe that state medicine, by whatever term you wish to define it, will not come until the medical profession invites it and makes it possible.

TUBERCULOUS ENJOY WORK

In New York City is a workshop for the tuberculous "where garments are well made and patients made well." This workshop has proved that the tuberculous need not be entirely dependent. Some of these persons are entirely independent.

When a patient is well enough to be active without any detriment whatever to his health, he is usually desirous of work and of making at least a part salary. Hence in New York City there is a sheltered workshop, the Altro Work Shop for the tuberculous, where 125 men and women are employed, making all kinds of uniforms for institutions, hotels, restaurants and industrial concerns. Edward Hochhauser explains the nature of this recreation-work plan of rehabilitation in the November issue of *Hygeia*, the Health Magazine.

FRACTURES OF THE MANDIBLE*

By CHAUNCEY B. WRIGHT, M. D.
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FRACTURE of the mandible occurs most often between the ages of twenty and forty. During youth the undeveloped bone is more elastic and therefore not so easily broken. At the twenty-fifth year the mandible has obtained its full growth. In old age it has a marked decrease in size following the extraction of numerous teeth. Fractures of the jaw are due largely to impacts and not to its horseshoe shape. In fact, it has been shown that this horseshoe shape makes it proportionately stronger than the long bones.

The most frequent single seat of fracture is the region of the mental foramen. The bone is weakened here by the foramen and by the peculiarly attenuated internal structure of the bone at this place, which is one of the fixed points from which growth extends. At this position, also, is the middle of the curve in the body of the jaw and finally the large socket of the canine tooth. In one series of cases reported of all the double fractures, 77% were located at the mental foramen on one side and at the angle of the opposite side. In single fractures, in some series of cases, the fracture at the angle is more frequent than at the mental foramen.

The mere reduction and splinting of the fracture of the jaw does not insure a successful outcome. Malocclusion will result from the slightest deviation and therefore, will cause an interference of proper mastication. To understand the etiology of malocclusion, one must consider the action of the muscles to which the jaw gives attachments. The displacement of the fragments of the fractured jaw is always maintained or modified by the action of these muscles. The hyoid bone is situated on a lower plane than the attachment of the muscles to the inner surface of the body of the mandible. These muscles are the mylohyoid, geniohyoglossus, diagastric and geniohyoid. The hyoid bone is not fixed in its position which is affected by moving the head, talking and swallowing, which, may in turn, change the position of the fragments. In a fracture between the symphysis and the angle, the mental fragment will be pulled downward and backward unless prevented by the lines of the fracture.

Attached to the ramus of the jaw at its processes are the muscles of mastication. The masseter, temporal and internal pterygoid are concerned in closing the mouth while the external pterygoid assists the mandibulohyoid muscles in opening the mouth. In a fracture at the angle the posterior body fragment is usually drawn upward by the masseter and internal pterygoid and the chin is depressed and the lower incisors do not come to occlusion. A fractured coronoid process is drawn upward and backward by the temporal muscle but, in case of a fracture of the ramus, there is little or no displacement.

There are two methods of holding the fragments in the correct position, one being to hold the fragments in their proper relation to the upper jaw and the other to fix directly the broken fragments to each other. Fixation by a Barton or four-tailed bandage is not to be recommended as it generally causes backward pressure on the chin which will tend to produce more displacement as was shown in the forepart of this paper.

The most common as well as most efficient method is fixation by wiring. In using this method it is preferable to have the teeth cleansed of tartar before applying the wires in order to prevent gingivitis. An eyelet made of #24 gauge brass is applied to a lower tooth and another to a corresponding

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upper tooth. The upper and lower eyelets are then connected by a wire, the teeth brought into occlusion and the ends of the connecting wire twisted together. A similar procedure is done upon the opposite side of the mouth and possibly a third set of teeth should be treated. The wires tend to loosen in a few days and should be tightened. The slight motion of the jaws due to loosening of the wires, as compared to absolute rigidity of splints is an advantage in the later stages of treatment as it tends to stimulate bone regeneration. If the sharp ends of the wires are irritating to the inner surfaces of the cheek, they should be covered by molding compound.

Fixation by wiring or plating the bone fragments should never be attempted in recent fractures which communicate with the mouth because of the danger of infection. Roots of teeth encroaching on the line of fracture frequently give rise to infection and, as a general rule, should be removed. The fractured line often extends into an alveolar process, surrounding the apex of a tooth, which causes devitalized teeth that should be removed. These teeth should, however, be distinguished from loose teeth which are not necessarily devitalized.

The third method of treatment is by dental splints. This requires the technical skill of a dentist for its construction and must be made for the individual case. It demands considerable experience and at least two days of time which would involve much expense.

The complications are four in number. The first is osteomyelitis which may be local or diffuse. It is fortunately uncommon. Syphilis is a very frequent complication. The third and most important complication, is malocclusion which may occur in even the simplest case. The causes of malocclusion have already been discussed in the consideration of the muscular action of the bone. The fourth and very important complication is malunion.

The two changes which are most commonly met in the fracture of the mandible are resorption and osteogenesis. These two conditions are so closely linked together that it is possible to assume that the relationship may be a true law of ossification. The bone is of very unstable tissue as evidenced by its rapid dissolution in certain diseases such as the osteolytic sarcoma of early life. It is generally accepted that increased blood supply aids resorption. Pressure, such as that caused by a mechanical contrivance, will cause resorption. Any influence which disturbs the equilibrium of the stability of bone tissue will cause bone resorption. Before a bone repair can take place, osteogenesis must occur.

In all probability the periosteum plays a definite role in the process of osteogenesis. The osteoblasts which are found in the deep and superficial layers of bone and in the Haversian canals can cause new bone formation. In bone resorption Leriche believes that calcareous elements which are necessary for ossification are freed from resorbing bone.

As a general rule, in a fracture of the mandible, one sees good clinical healing, although the röentgenogram shows a marked loss of lime salts. In one case reported there was resorption of bone at the site of the fracture as late as seventy-four days, although most observers give forty-three days as the healing time in normal cases.

Conclusions:

1. The most exact criterion for a correct alignment of the fragments is the occlusion of the teeth.
2. Röentgen examination should include the entire jaw.
3. Resorption about the fracture shows for a long period and is often interpreted as non-union.

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CANCER OF THE BUCCAL MUCOUS MEMBRANE AND THE JAW*

By J. EDWARD HUBBARD, M. D.
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THE subject of cancer of the mouth covers a great deal of territory and provokes considerable thought. In this paper tonight I shall discuss the malignancies of the buccal mucous membrane and the jaw. It is being presented in a general way, however, taking into consideration malignancy in all phases regardless of location.

We know the nature of cancer in a structural way, but the cause is still unknown. More than a generation of workers have labored with great intelligence and patience; a mass of information has been collected and carefully sifted; but still we find ourselves very much where our forefathers were as to the cause and cure of cancer. All that our forefathers knew was to remove the lesion, if possible. To this knowledge we have added nothing except the use of radium and x-ray. The removal is done with less pain, thanks to anesthetics; with greater safety thanks to antiseptics and asepsis; and we do it with less probability of recurrence, due to better technique; but still we know very little of the cause and cure of cancer.

In my limited experience in the past ten years, I have treated around two thousand cases of cancer, of which forty have been of the jaw or the buccal mucous membrane. I believe that in cases of cancer, whether of the mouth, rectum or any other part of the anatomy, we are forced to arrive at the conclusion that the theory of the five year cure is rather questionable, for there are cases of six or seven years duration or even longer, reported as cured, in which the patient may have the appearance of the same type of cancer either in a different location or at the original site, or a different form of malignancy at a distant point. Recent findings by research workers have tended to the conclusion that probably once a cancerous patient, always one, and that cancer will eventually be a factor in the cause of death. However, there are many cases of reported cures of years standing. It is unfortunate, but many of these cases did not have a biopsy at the time of treatment, hence a possible incorrect diagnosis; others may have had erroneous laboratory findings. It is true that this is not an optimistic view to take. At this time there are many cases of cancer reported as cured, which probably were never malignant. It may be then, that the treatment and the cure of cancer has mostly been from the standpoint of statistics. A remedy which cures one case is very good for the patient; one which cures two cases is interesting; fifty cures would indicate the necessity of further investigation but five hundred cures — then that would mean something. The present methods have not come up to the requirements so far. A case here and there cured would not indicate the discovery of a specific for the treatment of malignancy. The reason for this digression is the fact that we are daily questioned as to this or that reported new discovery. Some should be condemned, while others should be given time to prove their value. There is intense interest in the subject of growths and malignancies, and these are matters of concern to many of the better informed members of our American communities. When properly directed, this interest should result in greater concern regarding mouth health. It is important to the dental and medical professions to stress the necessity of this attention. There is no other part of the body which offers the opportunities for observation of a pre-cancerous lesion as the mouth, except the skin.

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Four thousand individuals each year in America is the approximate number of deaths from cancer of the mouth and lips. There is very little literature on cancer of the jaw as compared to malignancies of other parts of the body. There has been more written about the buccal mucous membrane, the larynx, the pharynx, the naso-pharynx, the tongue, tonsils, etc., than of the jaw both upper and lower. The treatment which has been advocated and used extensively has been surgery, and while very mutilating, has furnished some splendid results, but on the whole, has been disappointing.

In this paper I shall refer generally to cancer of the buccal mucous membrane and of the jaw as one subject. The predisposing causes, so far as are known at the present are particularly chronic infections, decayed teeth, leukoplakia, papillomas and syphilis: and the exciting causes—tobacco and faulty plates or bridges. It is not infrequent to get a history of the patient developing a toothache as the first symptom. The condition of the tooth justifies its removal, but it is not followed by relief of symptoms. There is a rapid growth of malignant tissue from the point of extraction. The patient's symptoms were from the malignancy. Frequently where there has been syphilis, epithelioma is a sequel developing on an old syphilitic scar.

Fourner states that leukoplakia is followed in thirty percent of the cases by cancer, and should always be treated as a pre-cancerous lesion. Bergman found it preceded cancer in thirty-four percent of cases. Tobacco is thought to have an important part in the causation of cancer of the buccal mucous membrane. However the factor which plays the major part is syphilis. It is strange to find that while syphilis is frequently overlooked in other parts of the body, malignancy of the mouth is often treated by anti-luetic therapy before the correct diagnosis is made. This may be avoided by a biopsy rather than depending upon the blood laboratory report which, in malignancy, is often misleading.

Types of Malignancy:

Malignant tumors of the jaw: (maxillæ)

1. Sarcoma—myxo	2. Carcinoma—Basal cell
fibro	Squamous cell
osteo	Cylindrical cell
chondro	Round cell
spindle cell	
melanotic	
mixed	
angio	

2. Carcinoma (derived from paradental epithelial rests and occasionally a carcinoma elsewhere metastasizes to the maxillæ.)

Carcinoma of the basal cell type arise from the nasal or antrum mucosa. Squamous cell carcinoma is rare in the antrum. The cylindrical cell carcinoma is the most frequent type encountered. There are two separate sources of malignant epithelial tumors of the antrum. First, those which arise from the mucosa; and second, those which arise from the epithelial dental structure, which may first appear in the antrum cavity. In each there is considerable variety of structure and many peculiarities.

From the mucosa arise first the papilliary tumors. These are of slow growth but eventually become fully malignant. Second, carcinoma of the basal cell type; these are usually designated as an endothelioma. They are of slow growth but recur persistently after incomplete removal and may invade the bone and eventually the lymph nodes. The squamous cell carcinoma is rarely seen in the antrum except when the invasion is secondary. The cylindrical cell is the common type of antrum cancer. It forms a bulky rapidly growing tumor which distends the cavity, protrudes into the nares, erodes bone, ulcerates, bleeds freely; and recurs after operation. Round cell carcinoma probably forms the majority of the so-called sarcoma in this region. True sarcomas of the antrum are chiefly the angio-sarcomas and myxo-sarcomas arising from the mucosa. The osteogenic sarcomas are comparatively rare and are very easily recognized by their structure. Since the prognosis in malignant tumors of this region is unfavorable, almost the only

service the physician can render in these cases is the early recognition of the disease. The onset of symptoms is divided into two groups; first, the patients in which the disease is preceded or accompanied by a purulent or bloody discharge from the nares; second, those in which no signs or symptoms are observed until the tumor has reached such size as to produce pressure symptoms. It is important to note that in many cases symptoms long regarded as being due to pyorrhea, toothache, neuralgia or simple sinusitis are in reality symptoms of cancer. The condition of the antrum should always be examined and studied from an x-ray photograph, as well as by the clinical examination.

Three stages in the course of malignant tumors are emphasized by Jacques. In the first stage, that of latency, malignancy may be suspected from the aching and neuralgic pain in the jaw, purulent discharge, bleeding, and in case of dental tumors with loosening of the teeth. In the second stage, that of invasion, there is destruction of the antrum walls, hemorrhage, ulceration, extension of the skin, orbit, skull and the lymph nodes. The general duration of the disease is from four months to two years. Recovery from squamous cell or true carcinoma is very rare. Several peculiarities distinguish cancer of the jaw. Jessew places it second in frequency to cancer of the uterus. Jackson gives it a third rating and Manneter a fourth. From its location and accessibility, the disease is readily recognizable. Meller places the mortality at seventy to ninety percent. Metastatic involvement is frequently found in both cervical regions. According to Ewing, this is often due to embolism, so it is important in examining any suspected cancer regardless of location, to be careful and not use undue pressure in the examination, for it is very easy to break off a few cancerous cells which may be carried off to lodge in another location and start a fresh colony. I believe that many patients have sacrificed their lives by going from doctor to doctor for examination, and, as the result of manipulation, the malignancy eventually covered many areas other than the original or primary lesion. The metastases are rather rare in the organs but they have been observed in the liver, heart, adrenals and mesentery. A few cases of extension to the lungs and pleura have been reported.

The chief causes of death are pneumonia, septicemia, edema of the glottis, extension to the brain and hemorrhage. Ewing states that in the past a heavy mortality has followed surgery.

In the last few years radium is playing an important therapeutic role. This is particularly true in treatment of cancers of the buccal mucous membrane and at the present is offering some encouraging results. In cases of cancer of the jaw, it is important to have an x-ray picture to determine whether or not there is any bone involvement. If there is, then surgery is always indicated together with radium or deep x-ray. It is not infrequent that surgery may be necessary following the use of radium to remove devitalized bone, due to the destruction of the periosteum by heavy radiation. If necessary, I do not hesitate to use a dosage of radium which will necessitate some surgical procedure at a later date. The important part is the cure of the primary condition, which, eventually, would mean death, and so a destruction of bone means, generally speaking, that a determined and fearless application of radiation offers the patient a chance to recover, while a timid treatment although cautious, so far as the immediate treatment is concerned may be very disastrous to the future of the individual.

Diagnosis is made by examination of the lesion, the history and general findings. The use of the x-ray is often necessary to aid in the differentiation of a benign from a malignant tumor involving the bone. An important procedure is securing a biopsy and a dependable pathological report.

The prognosis is bad. Meller reports that surgery prolongs life on an average of thirteen months, with a cure of fourteen and six-tenths percent. There is an operative mortality of thirteen percent. During the past ten years, I have treated forty cases of cancer

of the jaw and buccal mucous membrane, thirteen of which are still living, eight of them apparently cured. Hence, most of them have followed the usual course; improvement for a while, possibly for a year, then recurrence and death.

In the buccal mucous membrane type, the results have been better than in that of the jaw. I do not believe that there is any thing to be gained in a hopeless case of cancer by radiation with palliation as the objective. It seems that a small dose of radiation will stimulate the growth of the lesion, while a large dose will produce sloughing and ulceration and will leave the patient more uncomfortable than he was previous to the therapy.

Ewing seems to think that the progress in treatment of buccal mucous membrane cancers will be influenced in the future by the use of radium. Asherson reports cures by using two thousand milligram hours of radiation in cancer of the upper jaw; stressing the importance of the first application being a massive one, because the inhibitory effect on the malignancy is in the first radiation. The English rhinologists especially, seem to have developed considerable reliance in radium.

Summary:

First—attention to all predisposing factors.

Second—I wish to stress the importance of tissue examination by a competent pathologist.

Third—early treatment by surgery or radiation, or by both.

Fourth—the high mortality even if recognized early.

A VOICE FROM CONTRACT PRACTICE*

By HORACE R. HICKS, M. D.,
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MUCH discourse has arisen of late in regard to Contract or "List" hospital and medical practice. To date the journals have pictured only one side. It is my purpose to record some of the observations by one doing "list" practice with the hope that it may furnish to my fellows a minor conception of this phase of medicine. The observations are made in all good faith and are open to criticism both constructive and destructive.

It so happened that at the completion of my interneship the opportunity presented itself to allow me to become engaged in contract practice. Against the advice and entreaties of my elderly confreres all of whom I considered wise in medical lore I came to southern West Virginia, because I wanted to begin practicing medicine with plenty of work to do and because the pecuniary returns allowed of myself the taking of a mate. One readily recalls that this was in the days when specialism was the desire of all graduates. And may I state here that I found little time to idle, for from the first day as a "company doctor" I had all the patients that I could attend to. "Have you visited the new doctor", is a famous sentence in "list" practice and it requires all the skill possible to differentiate the sick from the well during these days. This baptism of fire is certainly valuable to the young practitioner and if ever tact were needed 'tis at this time. Fortunate indeed is he who passes this severe test with flying colors.

And now in defense of those doing contract practice. As in every other line of daily toil, it is necessary that the man doing this type of work must be honest, resourceful, tactful, conscientious, lovable, tidy, quick to make friends, a good mixer and at the same time command a working knowledge of all the special branches of medicine. Were he Aesculapius, Hippocrates and Osler rolled into one with the medical knowledge of them all and lacking in good fellowship, he would

*Read before the staff of the Raleigh General Hospital, Beckley, April 4, 1933.

not be a good physician according to the rating he would receive from these people.

It has been my observation since entering upon the "list" practice of medicine that the majority of men are of high calibre, ethical, firm believers in attending medical meetings and clinics and staunch advocates of preventive medicine. I do not believe that there is another group of physicians in the world more interested in preventive medicine than are those doing list practice. We are doing routine vaccinations for smallpox, typhoid fever, scarlet fever and diphtheria. We have educated our camps to know when their vaccinations are due and it is surprising how these people respond to the call. In the beginning we had to run them down, but today they come seeking, strange as that may seem. We are sending water once a month for examination. We are teaching principles of hygiene and of sanitation. We have educated mothers in the care of infants both pre- and post-natal. The reason is quite obvious. We receive so much compensation each month regardless of sickness and the less sickness the less time and money needed to carry on the practice. As in every field there are exceptions, and occasionally a man is found who has not the ideals of Hippocrates driven peg by peg into his heart, and it is here that financial matters loom high over medical ideals. Fortunately this is the exception rather than the rule.

It is my belief that should the men doing list practice in southern West Virginia decide to migrate toward neighboring cities that they would not have lost from doing this work, but would have gained for the experience obtained certainly is valuable. In substantiation of this fact one has only to enumerate the physicians located in the larger southern West Virginia cities. It is a significant fact that the overwhelming majority began the practice of medicine as "company doctors". These men doing "list" practice see more sick people in one month than their fellow practitioners in the city see in three or four months. To my mind the "company doctor" comes nearer to fulfilling the respected title of "family doctor" than does any other member of the medical profession. We fill the role not only of physician but of social, family and community adviser as well. Incidently the man who is not prepared to carry on all of these necessary functions has no place in "list" practice and will soon be cast out regardless of his affiliations.

I have attempted to set down the good features of Contract Practice as done in southern West Virginia.

1. It furnishes at low cost per family adequate medical attention.
2. It furnishes family security in times of sickness.
3. As most of this work is away from medical centers it supplies rural districts with physicians.
4. It fixes responsibility both onto the employee and the physician.
5. It furnishes prompt and twenty-four hour medical service.
6. It carries out the installment buying plan so prevalent in America today.

And now as to the bad features so pictured:

1. It is the contention of the medical world at large that the industries are practicing medicine.

One can readily see the evil attached to a plan where the industry collects the medical fees and then pays the doctor a stipulated sum; the remainder going to fill the coffers of the treasury of the corporation. This practice should be condemned for it only tends to promote all the evils associated with a doctor on a salary. It is my firm conviction that industry is just as interested in seeing that the men working for them, and their families, are properly cared for in a medical way as are the people themselves and well do they know what will eventually happen by putting a physician on a salary. Industry only employs enough men to take care of each job daily and when they or their family are sick and the men have to be off duty it disrupts the organization. Therefore industry attempts to give their employees the best medical attention possible and they realize full well that the few dollars gained above a doctor's salary can never compensate for the loss sustained elsewhere.

2. It does away with the free choice of physicians.

All men doing "list" practice in southern West Virginia are graduates of Class A medical schools and have passed the examination of the Public Health Council. If contract work were not practiced around industrial plants in all probability there would be only one physician in reach of the people as no doubt collections would be so poor it would not justify more than one to locate in a community. In contract practice a physician is assured of his money at the end of the month and this in itself results in the people having higher type of physicians than otherwise would be the case.

3. It tends to encourage solicitation, underbidding and bribery.

The majority of industries entering into contracts with physicians to do the medical practice for their employees try to be fair in the matter. They want the physician to make enough to justify capable ones to follow up that class of practice. On the other hand they do not want to see their people extorted, and are interested in seeing them get the most they can for their money.

4. It is taken advantage of by those who are able to pay adequately for medical attention.

There are not enough well paid men around the average industrial plant where contract medical practice is done to justify an outside physician trying to build up a practice among them. It would be a hard matter to draw the line among a group of employees and determine who should pay by the month and who should pay by the visit.

When the good features are weighed in the balance against the bad as discussed, I believe that all will agree that the good predominates. In these times of scarcity of money, business upheavals and inability of the individual to pay it is only natural that all of us should become somewhat disgruntled, and it is my firm belief that were it not for the above circumstances little or nothing would have been spoken or written of list practice.

Since doing "list" practice in West Virginia it has been my good fortune to have my patients referred to three of the best hospitals in this country; namely, the Bluefield Sanitarium, the Beckley Hospital and the Raleigh General Hospital of Beckley. All of these hospitals are adequately equipped for both medical and surgical cases. The personnel of each is made up of the highest type of physicians and surgeons and all of my patients have taken kindly toward them. The patients are referred to them, special examinations and treatments given, case reports forwarded to me and my patients returned well pleased with the attention shown them. I do not believe that one word of criticism will ever come from those paying hospital fees and I am sure that none of them will ever live without that sense of security in sickness afforded by that same monthly fee.

It has been contended that "list" practice tends to produce carelessness in diagnosis, laziness, failure to take histories and case reports, indisposition to keep abreast of medical knowledge and a tendency to fall into that well known "rut". Here again we must go back to the character, ambition and get-up-and-go makeup of the individual doing "list" practice. It is my observation that the men of my acquaintance are all filled with the desire to scatter medical knowledge and all are doing up-to-date modern medicine. This observation is well founded since I am increasingly surprised at the acuteness of the diagnoses offered by my patients. It is not at all rare for the individual putting in calls to state that the patient has scarlet fever, diphtheria, or has pneumonia or typhoid fever. I have often wondered if my colleagues have observed this trend. I recently had a miner tell me that a patient had mumps of the testicle, when the parotid glands were not involved. Three days later the parotids became swollen and the patient ran a typical course for epidemic parotitis. With such knowledge in lay hands the incentive to lag and fall back must certainly be lacking in the modern physician. It has been written that one never stands still, that he must go forward or fall back and I'm glad to state that my neighbors are all progressives.

TUBERCULOSIS ABSTRACTS

Furnished through the courtesy of the West Virginia Tuberculosis Association

The need for assorting cases of pulmonary tuberculosis into definite groups led, some years ago, to the formulation of a scheme of classification. It is based primarily on the extent of the lesion and is now widely used by sanatoria and clinicians. In recent years, interest has been centered on the character of the fundamental tissue reaction in the lungs. Accordingly, Dr. George G. Ornstein and his coworkers have attempted to classify the disease on a qualitative basis of tissue reaction resulting from infection by the tubercle bacillus. They describe three main types of acute tuberculosis. Abstracts of the paper by Drs. Ornstein and Ulmar follow:

Acute Forms of Pulmonary Tuberculosis

The authors disagree with the conception that tuberculosis usually begins as a minimal lesion and slowly progresses to the far advanced stage. They point out that inflammatory forms can occur with an acuteness not usually attributed to tuberculous infection, a small or large part of one or both lungs being involved within a few hours.

The Exudative Type—This is characterized by an intense inflammatory reaction produced by a small dose of tubercle bacilli in highly sensitized tissue. The response is chiefly serous, there is little if any destruction of tissue and the process clears by resolution.

Clinically it is frequently confused with the acute cold, grippal infections and broncho-pneumonia. The patient is taken acutely ill with fever, cough and expectoration. Fortunately, hemoptysis (40% of cases) or history of contact frequently indicate tuberculosis. Physical signs are scanty. However, x-ray is startling because of the extent of the lesion. Complete resolution rapidly occurs, frequently leaving no trace of the original infection.

Therapeutic indications are, (1) no interference with the normal return to *status quo* by any operative procedure and (2) avoidance of reinfection.

Case 1: A young woman, white, 29 years old, stenographer, presented herself because of an acute cold with cough, which persisted. She had had contact with a tuberculous father, who had died a few years previously, and more recently with a sister, who had recovered from tuberculosis. Her cough was not severe and she expectorated at times. She had lost some weight and complained of marked fatigue. Physical findings were scant: dullness on percussion and bronchovesicular breathing over the right upper lobe posteriorly, and moist rales were also heard from the apex to the fifth rib posteriorly.

X-ray disclosed a small annular shadow in the right upper lobe. There were some acinous productive changes in the left upper lobe. Examination of the sputum disclosed tubercle bacilli. The patient was sent to the country on a modified rest regimen. Her symptoms quickly disappeared. She gained weight rapidly. Six weeks later no abnormal findings were heard; she had no complaints; she gained 14 pounds. The annular shadow in her first x-ray had disappeared.

The Exudative-Productive Type—This type is undoubtedly due to a different balance between the mass of dosage or virulence of the organism and the allergic tissue reaction of the host. Instead of a purely exudative response there is evidence of tissue destruction, and the process of destruction and subsequent reparation is usually somewhat lengthy.

Clinically this form is characterized by an acute onset with toxemia of moderate severity which persists for a much longer time than in the exudative type. Eventually the symptoms disappear and x-ray shows clearing which is not however complete. A linear type of scarring, the result of the peculiar type of lung-damage which occurred at the onset of the disease, always remains. The patient recovers not by any means of operative interference but by being let alone and protected against any further reinfecting dosage. Surgical interference, in the opinion of the authors, cannot improve upon the results obtained through the normal unaided process of nature.

Case 3: A man, white, 25 years of age became ill, June, 1929, with an acute pneumonic condition. For two weeks the patient ran an elevation of temperature which subsided. He was then x-rayed and a diagnosis of tuberculosis was made. Tubercle bacilli were demonstrated in his sputum. He was sent to a sanatorium and was put to bed. His cough and expectoration subsided rapidly.

An x-ray was taken June 1, 1929. In the dense exudative shadow there were some high lights which appeared like cavity-formation. An x-ray, taken thirty-seven days later, demonstrated beginning resolution. An annular shadow was still present in

the 2nd interspace which was still interpreted as a cavity. Four months later the cavity had disappeared, and further resolution throughout was noted.

An x-ray was taken on December 16, 1929. By this time the patient had completely lost his cough and expectoration. He had gained weight. The x-ray demonstrated further resolution. Because of the irregular absorption of the exudate the x-ray gave one the impression of a large annular shadow being present which could easily be interpreted as a large cavity. The patient enjoyed good health throughout this period; there were no physical findings. The x-ray of July 12, 1930, showed a breaking-up of the walls of this annular shadow leaving linear strands of fibrosis.

On December 4, 1930, there were some linear strands in the right upper lobe. X-ray of February 14, 1931, showed still further resolution, leaving a few strands of fibrotic tissue.

The x-ray of April 12, 1932, showed no evidence of the acute inflammatory tuberculosis which had existed in the right upper lobe. At this time one would be very hesitant to state whether a tuberculous process had existed. This case is an excellent example of the possibility of resolution in acute inflammatory forms of tuberculosis. Any form of surgical or medical therapy would have produced a good result.

The Caseous-Pneumonic Type—Here, because of excessive stimulation of hyper-sensitive tissue by massive dosage, there is an intense inflammatory response resulting early in the disease, in cell death with its resulting coagulation necrosis or caseation. As a result the patient is very ill and toxic with profuse cough and expectoration as liquefaction of the caseated area occurs. As the caseous material is sloughed out, toxic absorption begins to diminish and temperature and pulse gradually approach the normal. With the completion of the sloughing the patient feels relatively well although there is now a definite cavity present in place of the previous area of caseation.

From now on repair proceeds with resultant scar formation. What makes the ultimate outlook for this patient bad is the constant shedding of tubercle bacilli from the wall of the cavity with the ever present danger of bronchogenic dissemination and spread of disease. It is this bad mechanical end result that our treatment must aim to prevent or correct. The danger is not the cavity but the positive sputum. Some form of compression therapy is indicated and this must await the completion of the acute stage.

The ultimate goal is a negative sputum and if this is not achieved by the use of pneumothorax some other form of compression therapy must be used, notably thoracoplasty or apicolysis. The authors' experience with phrenic neurectomy has been totally disappointing.

Case 7: A young woman, 25 years of age, who had been chronically ill a year and six months. Admitted to Metropolitan Hospital, June 9, 1931, complaining of cough, expectoration and repeated hemoptysis, having had a severe one just before her admission to the hospital. The whole left lung was involved with multilocular cavities; her sputum contained many bacilli. Collapse of the left lung by pneumothorax had failed because of obliterate pleuritis. X-ray examination of October 29, 1931, demonstrated an extensive tuberculous lesion involving the whole left lung, with the trachea and mediastinum pulled into the left thorax and a sharp rise of the left diaphragm. There was narrowing of the intercostal spaces throughout the whole left thorax.

A paravertebral thoracoplasty was performed in two stages by Dr. Coryllos. The general condition of the patient is improved. There has been little expectoration, with this little negative for tubercle bacilli. This is an excellent example of the importance of surgery changing the prognosis from a very poor to a most favorable one.

The Treatment of Acute Forms of Pulmonary Tuberculosis, Am. Rev. of Tuberc., Oct., 1933.

SEAL OF ACCEPTANCE

Because the average mother is too busy washing dishes, planning and cooking meals and performing the hundreds of other tasks which are required of her, she does not have time to investigate scientifically the foods she buys.

That is why the Seal of Acceptance of the Committee on Foods of the American Medical Association is being placed on foods by a group of scientists, prominent in their respective fields, as a part of the Association's program for education and the advancement of public health.

In the second of Doris W. McCray's articles in *Hygeia* in the department, "A Housewife Looks at the Committee on Foods," the steps in the Committee's acceptance of bread are described.

TO THE DOCTORS OF WEST VIRGINIA

MY FRIENDS:

This is my last opportunity to address you through the pages of the WEST VIRGINIA MEDICAL JOURNAL as President of our association. There are several subjects which might properly be discussed in this valedictory message but there is one which seems to me to be most urgent and timely. I refer to the active participation of our State and County medical societies in the plan of the Federal Emergency Relief Commission for the medical care of the indigent.

The members of the medical profession have carried more than their share of the hardships of the depression period. They have ministered to an ever increasing number of indigent patients with no expectation of recompense for time, trouble or expense. In the past this burden has been borne willingly and cheerfully as a sacred obligation of the disciples of Aesculapius. In times like the present, when the doctor's income is curtailed to the point of financial embarrassment the load is too heavy to carry.

The medical care of the indigent should be considered a responsibility of the whole community. The medical profession should contribute its part, but should not be expected to shoulder the entire burden. The Federal Emergency Relief Commission has recognized the urgency of the present situation, and has made funds available to augment the facilities for medical relief in needy communities. The physician's charitable contribution under this plan is the acceptance of the provision that "all fees shall be established on the basis of an appreciable reduction from the prevailing minimum charges for similar services in the state and local communities, with due recognition of the certainty, simplicity and promptness of payment."

It is gratifying to note that the plan outlined by the Federal Commission provides for the maintenance of the family physician relationship in so far as that is feasible in the handling of indigent cases, and that provision is made for free choice in the selection of physicians when that is possible.

There has been some protest from certain members of our profession to the effect that this plan is a stepping stone to State Medicine. In my opinion, this part of medical work is a public responsibility and should be handled as State Medicine. However that may be, this is not the time for argument. We are facing a critical situation. The Federal Government has advanced a plan for the duration of the emergency only, and it can be accepted by our profession on that basis.

Elsewhere in this JOURNAL you will find a copy of the plan approved by the Medical Society of New Jersey. Similar plans have been adopted by other states. I hope that action on this subject will be taken at the meeting of our Council on December fourteenth, and that a liaison committee will be appointed to advise with the West Virginia Unemployment Relief Administration, in regard to any medical problems which may arise. In the meantime, it behooves each county society to call a business meeting for the discussion of this subject and to decide whether or not they wish to endorse such a plan for this community. An active committee, representing the county medical society, should stand ready to assist the Director of Federal relief in each county in the practical and ethical management of local medical problems which arise in connection with the care of the indigent. Major Francis W. Turner is the Federal representative in charge of the distribution of these relief funds. Detailed information on the subject may be obtained by addressing him at the West Virginia Department of Public Welfare.

In closing this last communication, I want to express my gratitude to the members of our association whose kind words and cheerful coöperation have made the duties of my term of office a source of pleasure and satisfaction. The best wish that I can possibly make for my successor, President-elect, R. B. Miller, is that his administration during 1934 will be as pleasant as mine has been.

D. A. MacGregor.
President.

THE WEST VIRGINIA MEDICAL JOURNAL

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DOCTORS WHO ADVERTISE

Several weeks ago the Associated Press carried a news dispatch in West Virginia dailies to the effect that the Cook County Medical Society, Chicago, had voted to allow its members to advertise in newspapers. The following day the headquarters office of the Association at Charleston was beseiged with queries. Local newspapers wanted to know what action the local medical society was going to take. The Better Business Bureau wanted in on the ground floor. Many members of the Association called to know what it was all about.

In view of the widespread attention attracted by the newspaper item, we quote from the Chicago Medical Society:

"In reply to your letter of October 29, the Chicago Medical Society is the affiliated Cook County Society of the Illinois State Medical Society.

"The press dispatches regarding a meeting of the "Cook County Medical Society" had no relation to the regular medical affiliate of the Illinois State or the American Medical Association. The "Cook County Medical Society" is an organization associated with the United Medical Service, a corporation organized for profit.

"The United Medical Service carries advertisements in the Chicago papers. This institution has been declared an unethical institution by the Chicago Medical Society and the members known to be affiliated with the United Medical Service were expelled from membership.

"The Chicago Medical Society does not sanction advertising either by groups or individuals."

THOMAS P. FOLEY, M. D., *Secretary.*

THE DETROIT PLAN

At the annual meeting of the West Virginia State Medical Association last May, Dr. Henry R. Vaughan, Health Commissioner of the City of Detroit, spoke on the "Detroit Plan" in immunization work. Briefly, this plan brings about the participation of the medical profession in public health work in such a way that the participating physicians are reimbursed for the services they perform.

It will no doubt be of interest to other county medical societies to learn that the Kanawha Medical Society recently gave the Detroit plan a "try-out" in Charleston with considerable success. The movement was inaugurated by Dr. Hugh Robins, Charleston Health Commissioner, and approximately 75 Charleston doctors signified their willingness to participate. The immediate cause was an epidemic of diphtheria in Charleston, during which 32 cases had been reported.

Two days before the plan was tried out, Dr. Vaughan made a special trip to Charleston to assist in putting the plan in operation. Under his direction, the participating doctors agreed to be in their offices from 11 until 12 and from 3 until 4 o'clock on November 9 and November 11, at which time they agreed to give diphtheria immunizations to all comers for one dollar. The participating doctors further agreed to give free immunizations to those who could not afford to pay. The city health department, in conjunction with the state health department, furnished free toxoid (two dose) to the participating physicians for this campaign.

During the two days of the campaign, more than 2200 children received their first immunization and the great majority of them were of pre-school age. An interesting side-

light of the campaign was the fact that very few parents took advantage of the "free" offer. Approximately 1800 of the 2200 preferred to pay the dollar rather than to be classed as indigent. If only 1200 of the 1800 pay patients return for the second "shot," the campaign will result in a total of 3000 immunization doses. Figured in actual dollars and cents, the campaign averaged $40 for each participating physician. Had this immunization campaign been conducted in the usual way by the health department, the number of immunizations would probably have been reduced 50 percent and the medical profession, as a whole, would have been left entirely out of the picture.

Perhaps the most encouraging feature of the Charleston campaign was the newspaper support that it received. Both local newspapers entered whole-heartedly into the spirit of the occasion. Editorials and front-page stories appeared both before and during the campaign and the public was fully aware of exactly what was going on. On the day before the campaign started, a complete list of the participating physicians was published in both newspapers. Without this exxcellent support the campaign could never have succeeded.

The advantages of this "Detroit Plan" are many. The plan catches the pre-school child. It places preventive medicine in the hands of the family doctors where it rightfully belongs. It encourages support by both the medical profession and the public. It arouses civic interest. It removes the stigma usually attached to a charity clinic and gives many of the parents the dignity of being "pay patients."

HARRISON COUNTY IS FIRST

We pause this month to pay honor to seven component county medical societies of the Association whose memberships are 100 percent paid up for 1933. First honors go to Harrison County because is it the largest society in the 100 percent class. Next in order come the Barbour-Randolph-Tucker Medical Society, the Grant-Hardy-Hampshire,Mineral Medical Society, the Taylor County Society, the Mason County Society, the Wyoming County Society and the Doddridge County Society. The records of these component organizations are indeed gratifying in this year of financial stress.

In order that each county medical society may know its standing in the number of delinquent members, we are listing the societies below with the number of delinquents of each society.

COUNTY SOCIETY	DELINQUENTS
Brooke County	2
Cabell County	12
Central West Virginia	2
Eastern Panhandle	4
Fayette County	7
Greenbrier Valley	1
Hancock County	3
Kanawha County	11
Lewis County	2
Logan County	2
Marion County	7
Marshall County	2
McDowell County	4
Mercer County	8
Mingo County	3
Monongalia County	5
Ohio County	13
Parkersburg Academy	8
Preston County	4
Raleigh County	4
Summers County	2
Tyler-Wetzel	3
TOTAL	109

DR. JOHN A. JACKSON

Dr. John A. Jackson, 72 years of age, died unexpectedly at his home at Ronceverte on October 26 of heart disease. He was a former Mayor of Ronceverte, a former president of the Fort Spring district board of education and was a member of the county board of education at the time of his death. Dr. Jackson graduated from the University of Louisville school of medicine in 1887.

Dr. Jackson is survived by his widow, one son and one daughter, all of Ronceverte. Five sisters also survive. Funeral services were held on October 28 at Ronceverte.

COUNTY SOCIETY NEWS

KANAWHA COUNTY

An interesting meeting of the Kanawha Medical Society was held at the Daniel Boone Hotel on the evening of November 13 with more than 75 members in attendance. The essayist of the evening was Dr. B. R. Kirklin of the Mayo Clinic, Rochester, Minnesota, who spoke on "Some of the Less Commonly Recognized Lesions of the Gastro-Intestinal Tract." His talk was illustrated with lantern slides and discussion was opened by Dr. John E. Cannaday, Dr. E. L. Lanman and Dr. G. B. Capito. A general discussion followed.

A nominating committee to nominate officers at the December meeting was elected by the society. Other business matters included a brief report by Dr. Hugh B. Robins, City Health Commissioner, on the recent diphtheria immunization campaign which was carried out under the "Detroit Plan." Dr. Robins reported that more than 2,000 children had been immunized by the Charleston doctors during the campaign.

M. F. PETERSEN, *Secretary*.

OHIO COUNTY

Dr. Charles F. Geschickter of the Johns Hopkins Hospital, Baltimore, was the scientific essayist at the November 3 meeting of the Ohio County Medical Society which was held at the Ohio Valley General Hospital. His subject was "Tumors of the Breast." Discussion was opened by Dr. W. S. Fulton, Dr. E. L. Armbrecht, Dr. C. C. Clovis and Dr. H. G. Little.

At the November 17 meeting of the society, Dr. Louis F. Clerf of Philadelphia gave an interesting paper on "The Diagnosis and Treatment of Pulmonary Abscess and Bronchiectasis," with lantern slides. This paper was thrown open for general discussion and a number of practical points were brought out.

RUSSELL C. BOND, *Secretary*.

MERCER COUNTY

The regular monthly meeting of the Mercer County Medical Society was held at the Municipal Building, Bluefield, on the evening of October 26 with 20 members and five visitors present. Following the disposition of business matters, the scientific program was presented.

The program was opened by Dr. David B. Lepper, City health doctor, who gave a summary of the activities of the local health department for the past seven years and pointed out the various improvements which have been made. He was followed by Dr. A. E. McClue, State Health Commissioner, who gave an informal talk on his department. He stated that the major objective of his department was sanitation to eliminate the cause of the very large rate of incidence of typhoid fever and intestinal diseases in this state.

Dr. Fred Foard of the United States Public Health Service followed Dr. McClue on the same subject. Mr. Joe W. Savage, State Secretary, was present and also made an informal talk.

R. R. STUART, *Secretary*.

HARRISON COUNTY

The regular November meeting of the Harrison County Medical Society was held at the Stonewall Jackson Hotel, Clarksburg, with a fine attendance. An excellent dinner was served at the Hotel prior to the scientific program.

The essayist of the evening was Dr. S. L. Cherry, Clarksburg, who gave a very interesting paper on "Treatment of Common Diseases of the Heart." A general discussion followed. At this meeting, Dr. E. A. Hill, Clarksburg, and Dr. John Folk, Bridgeport, were elected to honorary membership in the county society.

EUGENE B. WRIGHT, *Secretary*.

WYOMING COUNTY

The Wyoming County Medical Society held its regular quarterly meeting at 8:00 p. m. on Thursday, November 2, 1933, with a goodly number of members present.

Dr. W. R. Morris, of Coval, addressed the society on "The Automatic Nervous System." Dr. Morris' address was illustrated with lantern slides and was very interesting and instructive, being freely discussed by several members of the society.

WARD WYLIE, *Secretary*.

CENTRAL WEST VIRGINIA

The Central West Virginia Medical Society held a very interesting and instructive meeting at Buckhannon on October 25 with 36 members and guests present. A fine dinner was served in the Rotary Club rooms prior to the opening of the meeting.

The annual election of officers was held, resulting in the election of Dr. L. W. Deeds, Buckhannon, as President for the coming year. Dr. Clayton C. Carson, Gassaway, was elected vice-president and Dr. Eugene Brown, Summersville, was elected Secretary-Treasurer.

At this meeting Dr. M. F. Gruber of Erbacon and Dr. Everett Walker of Adrian were elected to honorary membership in the county society and the State Medical Association was asked to concur in this election.

The scientific program was opened by Dr. E. T. W. Hall, Weston, who gave a very practical paper on "The Intravenous Treatment of Varicose Veins." He was followed by Dr. S. L. Cherry, Clarksburg, who read a fine paper on "Pernicious Anemia." Both papers were discussed freely by the members and many practical points were made which were of great value to the practitioner.

It was agreed to hold the next regular meeting of the society in Gassaway in February.

Eugene S. Brown, *Secretary*.

CABELL COUNTY

A special meeting of the Cabell County Medical Society was held at the Hotel Pritchard on the evening of November 6 at which time the school health and public health programs of the county were discussed. Dr. A. E. McClue, State Health Commissioner, was present and spoke at some length to the society members. There was an excellent attendance at this meeting.

The regular meeting of the Society was held on November 9 and was tendered by the staff of the Veterans Hospital at Huntington. Dinner was served at 6:30 o'clock and was followed by an inspection tour of the hospital. There was a splendid turnout for this excellent meeting. Greetings to the Cabell Society were extended by Dr. H. B. Fralic, Medical Officer in charge, and the response was made by Dr. W. Boyd Hunter, President of the Society.

The scientific program was opened by Dr. R. A. Wolford, Clinical Director, and Dr. T. G. Scott, Chief of the hospital laboratory service who presented an interesting case report. Discussion was opened by Dr. I. I. Hirschman. Dr. Harvey McClure, Chief of the surgical service, and Dr. A. B. Musa, Chief of the neurological service, then presented a paper on "Thrombo-Angiitis Obliterans" which was discussed by Dr. A. S. Jones, attending orthopedic specialist. Urological case reports were presented by Dr. R. M. Bobbitt and Dr. Ivan R. Harwood, both of Huntington.

W. W. Strange, *Secretary*.

BARBOUR-RANDOLPH-TUCKER

Dr. J. L. Miller of Thomas and Dr. H. H. Bolton, Jr., of Elkins were the essayists at the November 10 meeting of the Barbour-Randolph-Tucker County Medical Society which was held in Elkins. Mrs. S. W. S. Hoover, Federal Relief Administrator of Randolph County, also read an interesting paper on the relationship of physicians to federal relief.

Dr. Miller presented a highly interesting and entertaining paper and Dr. Bolton reported on his recent trip to Cleveland for the Interstate Post Graduate Assembly. Reports were also made by the delegates to the State Association meeting in Charleston last May. A number of important phases of medical economics were discussed which will be reported on later.

Russell C. Wolfe, *Secretary*.

LOGAN COUNTY

The Logan County Medical Society held its regular November meeting on the evening of the 15th at the Hatfield-Lawson Hospital, Logan, with 18 members and visitors present. After transacting routine business the following scientific program was rendered: Dr. R. O. Halloran, of Charleston, addressed the society on "Treatment of the Common Skin Affections"; and Dr. Philip Jaisohn, also of Charleston, addressed the society on "Are We Doing all We Can for Our Cancer Patients?"

Both addresses were terse and to the point and thoroughly practical, and there was a good deal of discussion and questions asked by the members present.

News Items: Dr. J. M. Moore, recently of Charleston, has been added to the staff of the Hatfield-Lawson Hospital as house physician. The hospital also has two internes, Dr. J. W. Caeney, and Dr. J. M. Mansion, who have been there since July this year.

Dr. Walter W. Brewer has recently opened a new hospital, the Logan Clinic, in Logan. Dr. C. L. Border, recently on the staff of the Hatfield-Lawson Hospital, is associated with Dr. Brewer as first assistant and house physician.

Dr. C. A. Davis, eye-ear-nose-and-throat, has recently moved his office from the Morrison Build-

ing, Logan, to the White and Browning Building, Logan.

Dr. D. T. Moore of Omar, who has been ill for some two weeks, is improving and hopes to be back on the job soon. Dr. L. B. Ward of Charleston, has been taking care of Dr. Moore's practice during his illness.

Dr. Fred E. Brammer, of Dehue, attended the International Post-Graduate Assembly at Cleveland, Oct. 16-21.

Dr. J. L. Patterson, of Holden was recently elected to membership in the Logan County Medical Society.

WOMAN'S AUXILIARY

MONONGALIA COUNTY

The Woman's Auxiliary to the Monongalia County Medical Society met at the home of Mrs. R. C. Farrier, Morgantown, on October 16 with Mrs. C. C. Romine, President, presiding. Two new members, Mrs. Justus Pickett and Mrs. F. R. Whittlesey, were welcomed into the Auxiliary at this meeting.

An interesting and instructive article from a recent magazine entitled "The Greatest Risk that Women Run," was read by Mrs. Romine. During the business session which followed it was agreed that the Auxiliary would utilize membership tickets to local theaters as a means of raising money, instead of holding the annual benefit bridge party.

OHIO COUNTY AUXILIARY

The Woman's Auxiliary to the Ohio County Medical Society held its October meeting at the Nurses Home of the Ohio Valley General Hospital, Wheeling, on October 20 with 21 members in attendance. Mrs. R. U. Drinkard, President, presided at the meeting.

The speaker was Mr. George J. Kossuth of Wheeling who talked on the "Magnolia Gardens of South Carolina." His interesting address was illustrated with lantern slides. Mrs. George B. Thieroff sang a group of songs, accompanied at the piano by Mrs. Howard Stilwell. The doctors, who met on the same evening, later joined their wives for reception and refreshments.

NEWS NOTES: A son was born to Dr. and Mrs. Russell C. Bond on November 9, 1933.

AMEBIC DYSENTERY

The Journal of the American Medical Association, (Nov. 18, 1933) calls attention to two reports emanating from the department of health of the City of Chicago relative to an epidemic of amebic dysentery with a focus in a hotel in Chicago. The appearance of an unusual number of cases of amebic dysentery about the middle of August aroused the attention of the department of health. The cases were traced to one hotel. More than 25 percent of the food handlers at this hotel were, upon examination, found to be infested with endamœba histolytica.

It became apparent that many of the guests who had visited this hotel between May and the date of the examinations had become infected and had returned to their homes, later developing the acute symptoms which are typical of this disease. Because of the unusual character of the condition, the diagnosis seems in many instances to have been overlooked. Many of these cases were diagnosed as ulcerative colitis, some appendicitis or peritonitis, and others in other ways. Time Magazine reports that Texas Guinan, who recently died following an operation for ulcerative colitis, in reality was suffering from amebic dysentery contracted at this hotel in Chicago. It is reported that the condition has already appeared in at least fifty other cities.

The A. M. A. Journal concludes by saying, "The widespread character of the hazard, particularly in view of the tremendous dissemination that has taken place from the Chicago epidemic, demands the consideration of every public health authority.

NEW HOSPITAL AT SPENCER

Dr. J. M. DePue, a native of Roane County, formally opened the DePue hospital at Spencer on November 17. The three story brick building which houses the hospital is located on Market Street. The hospital itself is of 14 bed capacity and is modernly equipped.

Dr. DePue graduated from West Virginia University in 1922 and received his Masters' Degree there in 1924. After teaching three years he entered the school of medicine at the state university, graduating in 1929. He then entered Rush Medical school of the University of Chicago, receiving his M. D. degree in 1931. He interned one year in Chicago and spent another year at the Harper Hospital in Detroit, before returning to Spencer to begin practice.

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SIDELIGHTS OF MEDICINE

THE COAL MINE DOCTOR

In the coal fields, I became known as Doc. If my clients wanted to be especially nice, they called me Mister. How disgusting Doc used to sound to me. (I was one of those younger doctors overwhelmed by the romance of medicine. That profession with it's dignity and often not it's practicality.) D. D. (During Depression) the coal fields are very nice at the first of each month.

I spoke of fun in my title. What is this fun? Well, many of my patients are colored and I enjoy bringing out their amusing side. Do not accuse me of being a negrophile. Perhaps by letting you in on some of my experiences, you too will recall many that you have encountered.

The other evening a fellow rushed into my office and called to me, "Doc, come to my house right away."

"What is the trouble?" I asked.

"My baby is vomiting from both ends," was the reply.

A colored woman was having frequent hard labor pains and I asked her what she was going to name her baby. She quickly replied, "Thank God; if dis is de last one." Another one had just had her baby when I asked her what she was going to name it. Her reply was, "Glad yer here."

We had a colored woman in the hospital. She was pregnant near term and was very edematous. The edema extended up to her rib margin, making it impossible to hear the fœtal heart tones. I asked her if she could feel the baby move. She replied, "Yas sah, peers like it's playing baseball, but Doc, hit ain't showed no signs ob makin a home-run yit."

I recently made a visit to see a sick child and the mother followed me out on the porch. I noticed a terrible example of a rooster in the yard. It's legs were swollen, there was a patch of feathers here and there and it could hardly move. Nevertheless, it was trying to arouse a little interest in a bevy of hens. I could not help but remark, "Why not kill that rooster and put him out of his misery, he cannot do any good." The colored woman replied, "I ain't keepin him fo what good he is but fo what good he has did."

While visiting a sick infant, I noticed a large pot boiling on the stove. It was giving forth a peculiar odor so I asked the mother what was in the pot. "Dat's fertilizer tea," was the reply. Upon investi-

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gation, I found that this mother was making tea out of cow manure for her sick infant. We should page Katheryn Mayo who wrote "Mother India."

One of my steady clients asked me to go and see his old lady.

"Why George, you just buried your wife about three weeks ago," I replied.

"Yes Doc, but dis is annuder one."

"Have you married her," I asked.

"Nah sah but I's figurin on it."

It happened that George was a deacon in the colored church. Sometime later, one of the other deacons was in my office and I asked him about having a deacon who was living with a woman to whom he was not married.

"I knows dat, but George says it's his housekeeper.

"Well Matt, you know that is not true," I replied.

"Maybe it ain't, Doc, but George has more than one bed in his house, so how you go'n prove hit."

A colored patient of mine had been in bed several days suffering from "female trouble" and she asked me about taking "Lydia Pinkhams." I told her that I did not think it would do her much good and further more I had heard it said that there was a baby in every bottle. Her sister was sitting in the room and in all seriousness said "I heard dat one time and I took six bottles and ain't never seen no baby yit."

I was called out to see one of these so-called educated negro school teachers. I took out my thermometer and he called to his sister. "Sister, please sterilize this thermometer in Listerine before this doctor places it in my mouth."

After administering diphtheria antitoxin to a little boy I sat down and endeavored to explain to the mother the importance of a quarantine and how careful she should be with her child. She raised her nose in the air and in a bored tone of voice said "Oh Yeah."

There were some little colored children in my office and I overheard one of them exclaim, "Gee, look at dem big doctor bibles in dat case." I have often wondered how much better doctors we would all be if we consulted our medical books and literature as often as the religiously inclined consult their bibles.

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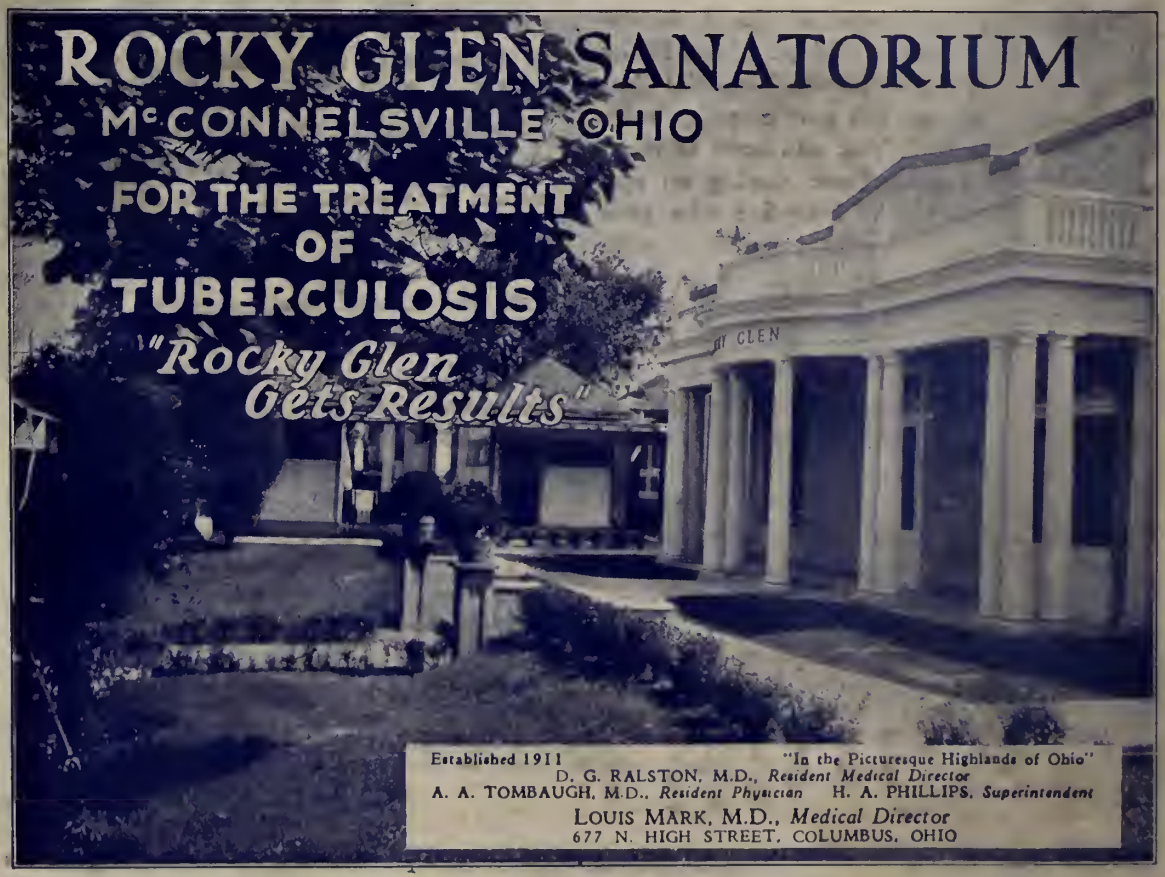

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